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Award Number: W81XWH-06-1-0415

TITLE: International Disability Educational Alliance (IDEAnet)

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REPORT DATE: March 2009

TYPE OF REPORT: Final

PREPARED FOR: U.S. Army Medical Research and Materiel Command  
Fort Detrick, Maryland 21702-5012

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REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
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1. REPORT DATE (DD-MM-YYYY) 01-03-2009		2. REPORT TYPE Final		3. DATES COVERED (From - To) 24 FEB 2006 - 24 FEB 2009	
4. TITLE AND SUBTITLE International Disability Educational Alliance (IDEAnet)				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER W81XWH-06-1-0415	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Dr. William Kennedy Smith  E-Mail:				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)  Center for International Rehabilitation Chicago, IL 60611				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Medical Research and Materiel Command Fort Detrick, Maryland 21702-5012				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT Approved for Public Release; Distribution Unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT The expansion of the Internet and World Wide Web has enabled the global distribution of information on an unprecedented scale. This relatively recent occurrence has combined with rapid improvements in the functionality of "Commercial Off the Shelf" (COTS) Information and Communications Technology (ICT) to create unprecedented opportunities for the design and implementation of innovative Advanced Distributed Learning (ADL) and Knowledge Management (KM) systems on a global scale. The Center for International Rehabilitation (CIR), through its International Rehabilitation Network (IRN) program, has been in the forefront of such efforts in remote, underserved and post-conflict areas of the world. The current proposal represents a continuation and expansion of these efforts. It calls for the systematic evaluation of IRN's blended distributed learning efforts to date, the creation of scalable models of content development and delivery, and the engineering of an updated web portal facilitating Virtual Communities of Practice (CoP). The aims of the project are: to develop a web-based Knowledge Management system coupled with a global alliance of participating individuals and institutions to allow for the development and evaluation of a variety of educational and training strategies including but not limited to Advanced Distributed Learning (ADL), Communities of Practice (CoP) and Open Content Development. Knowledge Management is important to any organization. The research and development of cost effective strategies to harness knowledge communities, and to create and deliver Advanced Distributed Learning (ADL), is particularly important to large technologically advanced, culturally and geographically diverse organization such as the Department of Defense. In addition, a sub-component of the project focuses on training for three cohorts of individuals; physicians, physical therapists and hospital administrators working at Ministry of Health rehabilitation centers in Iraq. The proposed project will test the hypothesis that it is possible to design and implement a global Knowledge Management system facilitating Advanced Distributed learning to serve geographically and culturally diverse audiences in remote and underserved regions of the world in a cost-effective manner using commercially-available "off the shelf" technology.					
15. SUBJECT TERMS Distance learning, Amputee, Rehabilitation Professionals, Database, Telemedicine, Knowledge Management, Communities of Practice					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT  UU	18. NUMBER OF PAGES  82	19a. NAME OF RESPONSIBLE PERSON USAMRMC
a. REPORT U	b. ABSTRACT U	c. THIS PAGE U			19b. TELEPHONE NUMBER (include area code)

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## **Glossary**

ADL: Advanced Distributed Learning  
AMA: American Medical Association  
BiH: Bosnia and Herzegovina  
CIR: Center for International Rehabilitation  
CME: continuing medical education  
CMS: Chicago Medical Society  
CoPs: Communities of Practice  
CRPD: Convention on the Rights of People with Disabilities  
HBPs: Hospital Based Physicians  
iCons in Medicine: program which incorporates a number of tools allowing healthcare providers to connect online  
iConsult: a teleconsultation program that connects healthcare providers in remote or medically underserved areas with a network of committed specialty physicians  
IDEAnet: International Disability Educational Alliance  
IDRM: International Disability Rights Monitor  
IMoH: Iraqi Ministry of Health  
IMSA: Iraqi Medical Sciences Association  
ISPO: International Society for Prosthetics and Orthotics  
iTAB: iCons Tele-consultation Advisory Board  
ITF: International Trust Fund for Demining and Mine Victims Assistance  
KM: Knowledge Management  
KOO: Kabul Orthopedic Organization  
LMS: Learning Management Systems  
MOU: Memorandum of Understanding  
NAAMA: National Arab American Medical Association  
NGOs: non-governmental organizations  
NUPOC: Northwestern University Prosthetic and Orthotic Center  
OCs: online communities  
OERs: Open Educational Resources  
OPP: Open Prosthetics Project  
P&O: prosthetics and orthotics  
PT: physical therapists/physiotherapists  
QI/QA: Quality Improvement/Quality Assurance  
RCM: Rehabilitation Center Managers  
RERC: Rehabilitation Engineering Research Center  
SCORM: Shareable Content Object Reference Model  
SCOs: Sharable Content Objects  
SN: social networking  
UKC: University Klinikal Center  
USAID: United States Agency for International Development  
VCoPs: Virtual Communities of Practice  
VBIAS: Vacuum-Based Impression and Alignment System  
WBCL: Web-Based Collaborative Learning

## **Introduction**

The contractor for the International Disability Educational Alliance (IDEA-net) is the Center for International Rehabilitation (CIR). William K. Smith, MD, is the Principal Investigator. The mission of IDEA-net is to foster collaborative efforts to use distributed learning and telemedicine to address health disparities and foster effective, sustainable health services internationally. This is accomplished through the innovative use of telecommunications technologies, computer-based training, state-of-the-art engineering projects, capacity-building education programs, interactive online tools, and advocacy on disability rights. In order to best achieve this mission, the network is divided into two topically-based Communities of Practice: the Rehabilitation Services Community and the Telemedicine Resource Center. Under the scope of work completed during this grant period, the CIR continues its work to develop a global pedagogical model as a framework for guiding the cost-effective development and delivery of blended Advanced Distributed Learning. The CIR has added to this the development of an effective, web-based Knowledge Management platform to facilitate Virtual Communities of Practice, including a medical volunteer network, as well as Open Content development, Information Services and effective program evaluation.

## **Body**

### **A. Research (R) and Development (D) of Pedagogical Model, Virtual Community of Practice and Medical Volunteer Network (iCon).**

**R1: Research and evaluate the existing empirical literature and theoretical/conceptual models for social design strategies and relevant technologies for building effective Virtual Communities of Practice in a cross-cultural, disability-related, poly-linguistic setting.**

During Year 1, the CIR developed a Virtual Community of Practice (VCoP) Design Guide that summarized major themes and guidelines from the previously reviewed literature. In Year 2, the CIR staff continued its literature review on the social design and technology for VCoPs.

Review of the current literature suggests a shift away from the terminology of “VCoP” in favor of Social Networking (SN) and Online Communities (OCs). The similarities between the concept of VCoPs and OCs are clear, and it is more a matter of verbiage difference than an ideological one. While Communities of Practice (CoPs), as defined by the Defense Acquisition University, are forums for practitioners of a discipline to interact and to share knowledge and experiences pertinent to the tasks at hand and to solve business problems, the membership and participation of OCs and SNs maybe limited to a select group of individuals or entirely open to any interested parties. Despite this difference in membership policies, just as in CoPs and VCoPs, the ultimate goal of OCs is “to rally people with similar views to action; to offer support to fellow sufferers; or to

find people with similar interests” (Preece, 2001). Online Communities offer a space for the “social construction of knowledge and the creation of opportunities for the development of professional socialization and identity” (Hara, 2009) in the same fashion as VCoPs. Whatever nomenclature is used, many of the web-based tools now available are clearly beneficial to the development of a strong online community, and the sharing of knowledge and information within that community.

The tools provided by most SNs and OCs are often grouped together as parts of “Web 2.0” – a term coined by Tim O’Reilly, president of O’Reilly Media, at a Web 2.0 Conference held in 2004. The concept of Web 2.0 views the Internet as a result of the creation of its users, and places the user in the position of creating, updating, and changing the content and trends of how the web, technology, and web design are used to enhance creativity, communications, secure information sharing, collaboration, and functionality. Central to the concept of Web 2.0 is the “ownership” of the information by those who post it online and those who access it – ownership which translates most often in the ability to transform this content through their own adaptations and contributions. Thus, the space, its form, and the content of the Internet are defined by the users and consumers of the information, who also serve as the creators of this information.

A report produced by AT&T indicates that the tools and behaviors associated with social networking and online communities have transitioned quickly from the consumer arena into the corporate world. Through the use of Web 2.0 tools, individuals are better able to expand their social networks and contacts beyond the average of 150, and strengthen their existing connections.<sup>1</sup> By utilizing these tools in a professional setting, it becomes possible to “foster collective intelligence, collaborative work and support communities.”<sup>2</sup> Though only between one and twenty percent of SN users regularly access or create material of value via a social network, per Winkle only two percent of the nodes of a SN must be reached to ensure that an idea will be successful in reaching a large population.<sup>3</sup>

Per Godwin, a number of professions have begun to employ Web 2.0 tools such as blogs and vlogs, Wikis, RSS feeds, photo and video sharing, web forums, instant messaging and chats,<sup>4</sup> and others in order to help link individuals with common interests and goals, and allow them to better share information and knowledge with one another (Godwin, 2007). Through the use of these tools, the Internet acts as “the platform and encourage[s] community and participation” and creates an environment where “information flows

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<sup>1</sup> The “Dunbar Number” as noted in the report from AT&T was first posited in Hill, R.A. and Dunbar, R.I.M. *Social Network Size in Humans*. Human Nature, 14,1,53-72. Hill and Dunbar studied the average size of peer groups and results indicated a maximum network size average of 153.5 individuals, and a mean of 124.9.

<sup>2</sup> AT&T Report.

<sup>3</sup> Kees Winkler as noted in report from AT&T. More information is available at: <http://www.keeswinkler.com/>

<sup>4</sup> Blogs function as a type of “online diary” – “blog” is a shortened form of “Web Log.” Vlogs are blogs based on video entries as opposed to written. Wikis are databases of information which can be edited by visitors and users. RSS feeds allow for the delivery of information about a given topic to subscribers via e-mail. Photo and video sharing allow users to post photos or videos that can be accessed by others. Web forums allow for commenting and communication either about a given topic, or within a particular group of individuals. Instant messaging and chats allow for real-time communication and commenting via the Internet. Adapted definitions as per: <http://wordnet.princeton.edu/>

from many directions, and can be generated by users.”<sup>5</sup> The results of Godwin’s examination of the level of use and success with various tools by library workers indicated that these professionals, and likely individuals in other professions, “are finding that it is useful to join a social network in order to share views, communicate with colleagues and develop professional contacts.”<sup>6</sup>

Hara found that, listservs, a type of e-mail-based forum which served as the precursor to many commonly used online SN tools such as RSS Feeds,<sup>7</sup> “create a sense of a community among professionals,” and allow for communication that might not otherwise take place. Through listservs and other online tools, “both novices and experienced members of a professional community may interact with each other, share their experiences, and learn from each other.”<sup>8</sup> The open communication and exchange of knowledge and information allowed by OCs provide a setting not only where “novices” in a profession, but also members with a greater level of experience are able to gain access to information and concepts related to their work, and learn to new approaches and strategies. These tools also allow for discussion through which new ideas, concepts, and approaches to problems solving can be conceived and tested.

Participation in OCs can take various forms, and members of a network may choose to contribute information, request information, or both, and may do any of these for a variety of reasons. A study of the users of a commercially-based OC by Bakx indicated that when asked why they contributed information to an OC, the most frequent responses were that they did so “‘just to be helpful’, ‘to pass knowledge’, [and because they] ‘...like to help other people this way’” (Bakx, 2007). Reasons given for requesting information from other participants include: “‘I would like to know the answer and I think other want too [sic]’...just curious, wanted to learn, wanted to know the opinion of other people,” and “to come in contact with other people.”<sup>9</sup> Web-based OC tools allow the opportunity for people to interact on a one-to-one basis, as well as in groups, and allow for information sharing of a level and scope that was not previously possible.

The process of creating a social network within OCs utilizes web-based tools that C oPs and VCoPs cannot fully take advantage of, and thus OCs are better able to ensure broader participation from members. Online social networking websites within OCs, allow users to create a personal profile and fill in information regarding where they live and work, their practice areas, and interests both professional and private. Users may also be able to upload pictures, links, videos, and other information or media, depending on the tools allowed by the social networking website. As Bakx notes, people utilizing these tools are not only connecting with the technology, but with one another in order to expand their knowledge and understanding of information.<sup>10</sup>

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<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

<sup>7</sup> RSS Feeds as defined by Harvard Law: <http://cyber.law.harvard.edu/readinessguide/glossary.html>

<sup>8</sup> Hara.

<sup>9</sup> Ibid.

<sup>10</sup> Ibid.

Podcasts and video sharing, especially when coupled with blogs, or when implemented as vlogs, offer great potential for distance education.<sup>11</sup> By the very nature of the media, podcasts make it possible for students or professionals to review material when they otherwise could not, and can be used as a “way of providing material before a lecture, reinforcing points made at a lecture, and as a revision tool.”<sup>12</sup>

Library workers have found these same techniques help to improve their connection with library users when compared to standard Information Literacy (IL) tools.<sup>13</sup> Through Blogs,<sup>14</sup> RSS Feeds, Wikis, Podcasts, Social Bookmarking and Tagging,<sup>15</sup> Social Networking,<sup>16</sup> Video Sharing,<sup>17</sup> Instant Messaging, and Photo Sharing<sup>18</sup> websites, Godwin explains that librarians are better able to uncover what information library users need, and deliver it to them. However, Godwin also notes the hesitation that some library workers feel about utilizing these web-based tools, as they sometimes can lead library users to misinformation – as is often seen in the use of Wikipedia, since it is editable by any user, and content is not always verified and cited.<sup>19</sup>

These same tools can be utilized for Web-Based Collaborative Learning (WBCL) (Park and Hyun, 2006). The range of asynchronous tools (i.e., e-mail, forums, newsfeeds, blogs, wikis) as well as synchronous tools (i.e., chat rooms and messenger applications, slideshow and screen sharing) allow for information to be shared on a one-to-one basis or with a group of individuals either in real-time, or posted for the recipients to view at a later time. Blogs specifically are invaluable to individuals who wish to share information with a wide audience. They also help to encourage the development of a community and offer an opportunity to reflect on various topics and open up forums for discussion.<sup>20</sup> Similarly, RSS feeds allow for information to be disseminated broadly and effectively, as they allow individuals to decide what topical areas and sources of information are most pertinent to them.<sup>21</sup>

Utilizing websites that have an existing audience will help to increase awareness about IDEAnet programs and encourage participation in them. YouTube Channels have been created for IDEAnet programs (iCons in Medicine and the International Disability Rights Monitor)<sup>22</sup> and to date the videos posted have been successful and rather popular (See **Appendix A**). In addition, information about the iCons and IDRM projects has been

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<sup>11</sup> Ibid.

<sup>12</sup> Ibid.

<sup>13</sup> Godwin.

<sup>14</sup> WordPress is a commonly used example of a blogging website

<sup>15</sup> Del.icio.us is an example of a social bookmarking website which allows users to share their bookmarks with others

<sup>16</sup> Facebook and MySpace are commonly used social networking websites

<sup>17</sup> YouTube is a commonly used video sharing website

<sup>18</sup> Flickr is a commonly used photo sharing website

<sup>19</sup> This phenomena was explored by comedian Stephen Colbert on his television program *The Colbert Report* as discussed in [http://news.cnet.com/8301-10784\\_3-6100754-7.html](http://news.cnet.com/8301-10784_3-6100754-7.html). Mr. Colbert stated that on Wikipedia “any user can change any entry, and if enough users agree with them, it becomes true” and he urged his viewers to change the Wikipedia entry pertaining to elephants, which they did.

<sup>20</sup> Windham (2007) as quoted by Godwin.

<sup>21</sup> Godwin.

<sup>22</sup> <http://www.youtube.com/user/IconsInMedicine> and <http://www.youtube.com/user/TheIDRM> respectively

posted with in Groups and Fan Pages created on Facebook (**See Appendix B**). Photos, videos, and links have been posted, and Facebook allows members to comment in a forum, creating an opportunity for feedback and a sense of community. These external (i.e., outside of the IDEAnet website) postings will help to encourage new traffic to the IDEAnet website, and will increase interest in its programs.

In areas where connectivity may be an issue thus limiting the availability of online resources, articles, and reference materials, the use of Social Networking websites and OCs may be especially beneficial (Juech, 2008). In the case of iCons in Medicine, access to teleconsultations and peer-to-peer sharing of information is even more greatly improved through the use of Store-and-Forward software that reduces the amount of time that an individual must sustain an Internet connection. As noted by Juech, International Telecommunication Union (ITU) findings indicate that broadband penetration is below one percent in many low-income countries, and so a system that is functional even with low-bandwidth connections – like iCons in Medicine – is particularly useful.

## **R2: Research into issues of importance in the areas of Knowledge Management and Communities of Practice.**

Review of the current literature suggests that the area of Knowledge Management (KM) is rapidly shifting as the awareness of and access to technology increases among the general public. The means by which information is produced, stored, and shared has turned quickly from a traditional “science push” model or a “market pull” model to a model which depends on interaction for innovation (Harmaakorpo and Mutanen, 2008).

Both “science push” and “market pull” models are unidirectional, and do not allow for communication between the creators and end users in order to make improvements or changes to an innovation. In the “science push” model, theoretical knowledge is generated in a scientific setting, and then flows into a practical context where it is applied. Similarly, in the “market pull” model, questions are raised by the end users who comprise the “market,” but following innovation by researchers, input from the end users is not gathered in order to make modifications to the innovation.<sup>23</sup> Per Harmaakorpo and Mutanen, interaction between the innovating partners and the end users allows for a greater level of influence on the innovation, and consequently it is better suited for the needs of the end users.

This possibility for interaction, sharing, collective learning, and the establishment of trust relationships is central to the development of a KM-based network that can establish itself and function successfully. The allowance for discussion also provides a space where different types of relationships can be created between various user-groups within the KM network. As per Granovetter, the social structure of online KM networks requires both weak and strong ties, and a system employing both is most successful.<sup>24</sup> Strong ties are characterized by common norms and high social network density, where weak ties are those that form in the “holes” between these norms within the social network. The

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<sup>23</sup> Ibid.

<sup>24</sup> Granovetter (1973 and 2005) as per Harmaakorpo and Mutanen.

strength of ties is determined by the amount of time, emotional connection, level of intimacy, and the amount of reciprocation seen between the users and user-groups within the social network.<sup>25</sup>

While both strong and weak ties are important to building an effective KM social network, it is the weak ties that allow for an influx new ideas and an increase in communication and sharing between users (Murata and Ikeya, 2008). A report from AT&T states that through the use of social networking websites and tools, KM will change, and the “Knowledge Managers will become Social Networking architects.”<sup>26</sup> SNs will not only increase the number of links between individuals, but will also encourage sharing information and collective thinking. Further, through the adoption of SNs as a strategy for KM, there will be more information to manage and more innovation and adaption will be needed.<sup>27</sup>

Because of the global nature of online SNs, it is possible for users to collaborate with one another at a distance. It is important to note that having a population of users with similar experiences and ideas is beneficial to the success of the KM network, but only to a point, as without some divergence and difference of opinion, new ideas will not be generated, shared, or implemented as freely. Differences in individuals’ viewpoint may be due to life experiences; geography; cultural, linguistic, political, religious variation; or other factors. By communicating with one another about a given topic or topics, and understanding the basis of these elements of user variation and their impact on one’s opinions, an open and effective exchange of knowledge can occur.

At first glance, online social and KM networks may seem expansive. Studies indicate that despite the large number of “friends” that many users have, they have personal interaction with or send messages to only a select group of friends. A recent study indicated that of the 300,000 Twitter users sampled, on average users had 80 friends, Facebook users had 120 friends on average, with the range extending up to 1,000.<sup>28</sup> Thus, while the entire network may be expansive, and weak ties may exist with many other participants, strong ties (as indicated by direct peer-to-peer contact) exist within the networks on a much smaller scale.

Within these socially-based KM networks, traditional database models have sometimes been employed to allow for this type of sharing of information within organizations. More recently, there has been a shift to include the utilization of Wikis to allow researchers to retrieve information as well as expanding the Wiki database by adding their own information to it (Regolini, et al., 2008). A Wiki is defined as “a CMS (Content Management System), which is a collaborative website where users can create and edit

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<sup>25</sup> Ibid.

<sup>26</sup> Report from AT&T.

<sup>27</sup> Ibid.

<sup>28</sup> Results of studies conducted by Dr. Bernardo Huberman of HP Labs, as reported in The Economist (March 12, 2009). Available online

[http://www.economist.com/science/prINTERfriendly.cfm?story\\_id=13277389](http://www.economist.com/science/prINTERfriendly.cfm?story_id=13277389)

These results are confirmed by the findings of Hill and Dunbar which posit that on average a person will have an average network size of 153.5 individuals, with a mean size of 124.9.

pages...[they] are decentralized...[ and are] the simplest online database that could possibly work.”<sup>29</sup>

As suggested by their name (from the Hawaiian term for quick), Wikis allow for researchers to use the least time-consuming approach to managing, searching, accessing, and distributing data and information. By their very nature – essentially small bits of server software that allow users to create and edit web content using any web browser and no other special tools - Wikis allow users to easily find the information they need, and add to it or edit it if they desire. Regolini, et al. found in a study of utilizing Wikis to determine their possible applications, that “the researchers asked to use Wikis were “willing to share information...[and] archive and retrieve information.”<sup>30</sup>

The ease of access to this information is key to the assurance that the intended audience will actually utilize the tools created and implemented for them. Regolini, et al. (2008) and Porter (2003) note the importance of ensuring a high level of ease of use of the information presented. Per Porter, the so-called “three-click rule” (i.e., that if individuals cannot access the information that they are seeking within three mouse clicks they will abandon their search and seek the information elsewhere) cannot be verified through a study of web users. Satisfaction ratings also indicate that failure to complete the tasks assigned for completion do not correlate directly with individuals reported level of satisfaction with their experience. However, Porter notes that information systems should be created with the user in mind. Design recommendations such as global navigation elements on every page and creating a navigation hierarchy which is shallow and wide are still pertinent to ensure the utility of a website.<sup>31</sup>

A recent report in *The Economist*<sup>32</sup> states that Dr. Bernardo Huberman of HP Labs has been working to identify a number of “laws of web surfing” including the number of times an average user will go from website to website in order to find information before giving up their search – a variation on the “three-click rule.” Dr. Huberman has also examined the “winner-takes-all” phenomenon, by which a few websites on a given topic or which provide information within a given category receive the most attention from users while others are ignored almost entirely.

*The Economist* report also addresses the need for scientists to embrace online social networking tools, as they have “tended to lag when it comes to embracing [ these tools]...to open up scientific discourse and encourage more effective collaboration.” While journalists have begun to utilize the Internet and receive comments from readers that may impact their future work, researchers remain hesitant to post articles online for review. Placement of research articles online in a public forum may allow for further expansion of an idea, and perhaps new perspectives that had not been previously considered. Despite the fact that “no one yet knows how to measure the impact of a blog post or the sharing of a good idea with another researcher in some collaborative web-based workspace,” through the use of social networking and online KM tools, the Internet

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<sup>29</sup> Choate (2006), and Leuf and Cunningham (2001) as cited and quoted by Regolini, et al.

<sup>30</sup> Regolini, et al. (2008).

<sup>31</sup> Porter (2003).

<sup>32</sup> *The Economist* (March 12, 2009). Available online  
[http://www.economist.com/science/printerfriendly.cfm?story\\_id=13277389](http://www.economist.com/science/printerfriendly.cfm?story_id=13277389)



provides a vast “market for great ideas” from which researchers or lay-users can identify the information they require.<sup>33</sup>

### R3: Pilot study of International Consultants in Medicine (iCon) in various geographically regions.

As was reported in the previous year’s report, two initial pilot studies (beta tests) have been conducted: 1. an internal test that focused on registration and consulting functions and 2. the first external involving physicians acting as Requestors and Volunteers in a controlled teleconsultation environment. These studies resulted in positive feedback which did not call for additional major changes, but identified follow-up items:

1. Consider redesigning the website to enhance it aesthetically.
2. Conduct a larger beta test to examine the functionality of the administrative roles for Chapter chairpersons, secretaries, etc.

In April 2008 the website was redesigned to be more user friendly and aesthetically appealing. See section A-D2 for details (See **Appendix C** for screen shots).

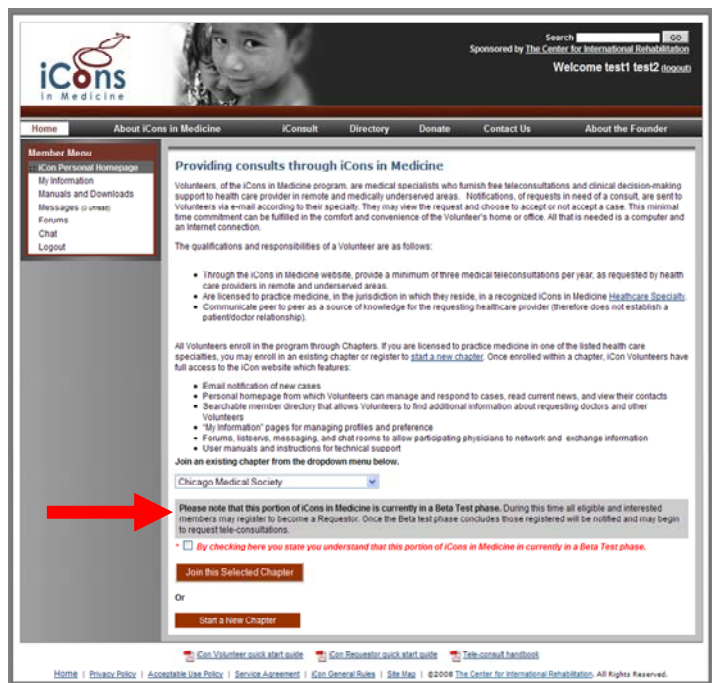
As a way to further increase usability, users of the teleconsultation program “iConsult” must acknowledge and agree to being part of an on-going “beta” test (Pilot) (**Figure 1**) which states:

**Please note that this portion of iCons in Medicine is currently in a Beta Test phase.**

During this time all eligible and interested members may register to become a Requestor. Once the Beta test phase concludes those registered will be notified and may begin to request tele-consultations.

*By checking here you state you understand that this portion of iCons in Medicine is currently in a Beta Test phase.*

**Figure 1**



<sup>33</sup> Ibid.

Though the system is fully operational, responses received from the program users regarding changes have been tracked in order to guide further improvements.

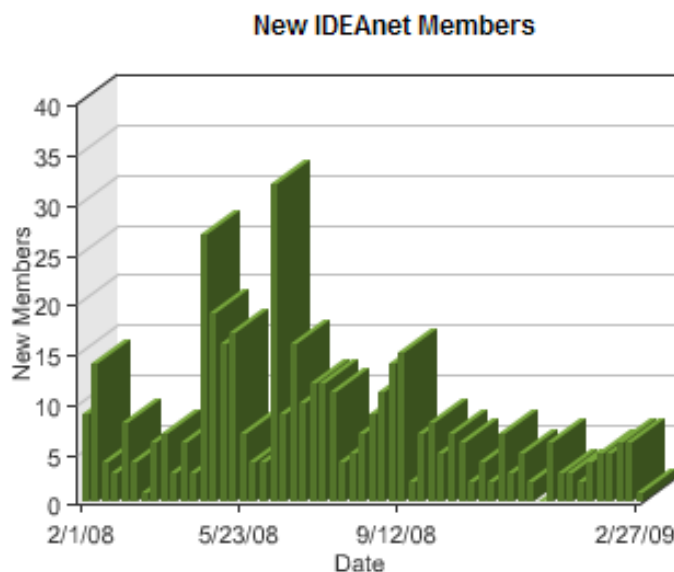
In an effort to expand the user-base and widen the audience of the iCons in Medicine website, information about the program has been added to a number of external websites. These have included popular websites with large existing audiences (e.g., Facebook and YouTube), a number of microblogging and blogging websites (e.g., Twitter, WordPress, Blogger, and Vox) for dissemination of update information, as well as the implementation of a bi-monthly newsletter. To date, response to these efforts has been positive, suggesting overall user satisfaction with the website and the program. Tracking of traffic to the iCons in Medicine website and the external websites selected for use suggest an increase in awareness of and interest in the program.

### **D1: Design and implement metrics for tracking involvement in Communities of Practice and the interactive components of Advanced Distributed Learning courses.**

The basic quantitative metrics that were previously established to assess the usage of the IDEAnet website and to measure the activity in interactive areas continued to be utilized during the past year. The following tool was used to track these metrics:

- Google Analytics, a free service from Google that was implemented to track statistics for all CIR websites (<http://www.google.com/analytics/index.html>).

**Graph 1**



Custom metrics were used as in previous years to measure certain functions and areas of the IDEAnet website. These tools were written to analyze the sites (Microsoft SQL database using ColdFusion) and to display the results in a password-protected website. The graph above and tables below display a monthly breakdown of the activity from February 2008 to the end of February 2009 on [www.ideanet.org](http://www.ideanet.org).

**Table 1: Visitor statistics**

<b>Date Range</b>	<b>Visits</b>	<b>Page Views</b>
Feb-08 3,023		10,124
Mar-08 3,058		9,234
Apr-08 2,816		8,893
May-08 2,255		6,873
Jun-08 2,109		6,153
Jul-08 2,163		6,290
Aug-08 1,673		4,300
Sep-08 2,595		7,281
Oct-08 2,458		6,877
Nov-08 2,150		5,952
Dec-08 1,588		4,114
Jan-09 1,992		4,665
Feb-09 2,242		5,381
Totals 30,122		86,137

Average visits per month: 2,317  
Average page views per month: 6,626  
Average page views per visit: 2.86

**Table 2: Visits by visitor type**

<b>Visitor Types</b>	<b>Visits</b>
New Visitor	19,910
Returning Visitor	10,314

**Table 3: Top five referrals to the site**

<b>Sources</b>	<b>Visits</b>
(direct)	7,792
Google	12,113
cirnetwork.org	1,480
Yahoo	989
stumbleupon.com	2,132

**Table 4: Top 25 countries based on the number of visitor**

Country	Visits	Pages/Visit
United States	13,894	2.93
Bosnia and Herzegovina	4,734	3.46
Canada	1,632	2.86
United Kingdom	1,000	2.18
India	898	2.57
France	54	1
Serbia	441	1.78
Germany	398	2.78
Serbia and Montenegro	394	1.87
Italy	368	1.82
Jamaica	3	49
Australia	320	2.66
Ireland	316	2.55
Venezuela	306	1.62
Mexico	240	2.06
Spain	221	2.19
Argentina	205	3.57
Brazil	197	2.17
Pakistan	184	2.54
Switzerland	140	3.45
Netherlands	124	3.74
Colombia	119	2
Philippines	118	2.22
Iran	103	2.24
China	91	2.05

**Table 5: A total of 30,224 visits came from 165 countries/territories**

Countries				
Afghanistan	Cook Islands	Iran	Netherlands	South Korea
Albania	Costa Rica	Iraq	New Zealand	Spain
Algeria	Croatia	Ireland	Nicaragua	Sri Lanka
Antigua and Barbuda	Cuba	Israel	Niger	Sudan
Argentina	Cyprus	Italy	Nigeria	Suriname
Armenia	Czech Republic	Ivory Coast	Norway	Sweden
Aruba	Denmark	Jamaica	Oman	Switzerland
Australia	Djibouti	Japan	Pakistan	Syria
Austria	Do미니카	Jordan	Palestinian Territory	Taiwan
Azerbaijan	Do미니칸共和國	Kazakhstan	Panama	Tajikistan
Bahamas	East Timor	Kenya	Papua New Guinea	Tanzania
Bahrain	Ecuador	Kuwait	Philippines	Thailand
Bangladesh	Egypt	Laos	Poland	Tonga
Barbados	El Salvador	Latvia	Portugal	Trinidad and Tobago
Belarus	Estonia	Lebanon	Puerto Rico	Tunisia
Belgium	Ethiopia	Lesotho	Qatar	Turkey
Belize	Fiji	Libya	Reunion	Turks and Caicos Islands
Benin	Finland	Lithuania	Romania	U.S. Virgin Islands
Bolivia	France	Luxembourg	Russia	Uganda
Bosnia and Herzegovina	Georgia	Macau SAR China	Rwanda	Ukraine
Botswana	Germany	Macedonia	Saint Kitts and Nevis	United Arab Emirates
Brazil	Ghana	Madagascar	Saint Lucia	United Kingdom
Brunei	Greece	Malaysia	Saudi Arabia	United States
Bulgaria	Greece	Maldives	Senegal	Uruguay
Burkina Faso	Guatemala	Malta	Serbia	Uzbekistan
Cambodia	Guyana	Mauritius	Serbia and Montenegro	Venezuela
Cameroon	Haiti	Mexico	Seychelles	Vietnam
Canada	Honduras	Moldova	Singapore	Yemen
Cayman Islands	Hong Kong	Mongolia	Slovakia	Zambia
Chile	Hungary	Morocco	Slovenia	Zimbabwe
China	Iceland	Myanmar	Solomon Islands	
Colombia	India	Namibia	Somalia	
Congo - Kinshasa	Indonesia	Nepal	South Africa	

**D2: Further develop a nd refine iCon store- and-forward system for use in medical consultation.**

iCons in Medicine is a global telehealth and humanitarian medicine volunteer alliance. The primary focus of iCons in Medicine is “iConsult,” a teleconsultation program that uses the Internet to connect healthcare providers in remote or medically underserved areas (Requestors) with a network of committed specialty physicians (Volunteers) who provide expertise, encouragement, and advice on difficult cases.

**Structure refinement**

This past year the participation structure for the iCons in Medicine program “iConsult” was refined. The structure is outlined below and illustrated in **Figure 2**.

**Figure 2**



**iCons International-** the international governing body and administrative arm of iCons in Medicine. iCons International acts as the default National Secretariat in countries that have not yet formed a National Secretariat.

**National Secretariat-** recruits and manages Chapters and Member Organizations within a specific geographic area, usually a country. National Secretariats may be formed within an existing entity, such as an academic medical center or major hospital, or as an independent charitable entity established solely for iConsult. **(See Appendix D for National Secretariat insert)**

**Chapter-** a group of physicians who volunteer as consultants through the iConsult program. Chapters are responsible for recruiting and enrolling qualified physicians as Volunteers in the iConsult program. New Chapters are formed when three or more Volunteers apply to create a Chapter. **(See Appendix E for Chapter/Volunteer insert)**

**Member Organization-** a group of healthcare providers who receive teleconsultation services through the iConsult program. Member Organizations are responsible for recruiting and enrolling Requestors in the iConsult program. Non-profit healthcare delivery organizations operating in remote or underserved areas are eligible to form Member Organizations. **(See Appendix F for Member Organization/Requestor insert)**

**Volunteer-** a physician who provides free teleconsultations to healthcare providers in remote and medically underserved areas through the iConsult program. All Volunteers enroll through a Chapter.

**Requestor-** a healthcare provider working in remote or underserved areas who requests teleconsultations through the iConsult program. All Requestors enroll through a Member Organization.

Implemented this past year, the iCons in Medicine program now allows for a “General Member” level. This level gives those in the medical field an opportunity to join iCons in Medicine to utilize social networking tools. If they qualify, they may later choose to participate in the “iConsult” program.

### **Recruitment efforts**

In March 2008, the Chicago Medical Society (CMS) (<http://www.cmsdocs.org/>) a professional medical society that promotes the concept of accessible, quality health services in Cook County, Illinois, signed a Memorandum of Understanding (MOU) with iCons in Medicine and became a Chapter. In April 2008, the Iraqi Medical Sciences Association (IMSA) ([www.imsausa.com](http://www.imsausa.com)), a non-profit, non-political professional association for Iraqi medical professionals living in the United States, also signed a MOU and began a Chapter.

The CMS and IMSA joined existing Chapters, the National Arab American Medical Association (NAAMA) (<http://www.naama.com/home.html>) and the University Clinical Center (UKC) in Tuzla, Bosnia.

Each of these Chapters has concentrated on recruiting their members into the program. Currently there is a total of 84 Volunteers in the program.

This past year, recruitment outreach has focused on enrolling Chapters and National Secretariats.

### **Chapters**

In June 2008, a mailing was sent to over 100 health specialty organizations in an effort to encourage U.S. Chapters. The mailing has been followed by e-mails, phone calls and additional information as needed. Subsequent communications have taken place with organizations that have been referred.

- **Current Chapters:**
  1. National Arab American Medical Association (NAAMA)
  2. Iraqi Medical Science Association (IMSA)
  3. Chicago Medical Society (CMS)
  4. University Clinical Center (UKC Tuzla)
  5. iCons One
  6. Radiology International

- **Organizations with an interest in becoming a Chapter:**

1. American College of Physicians
2. Society for Maternal-Fetal Medicine
3. Infectious Disease Society of America
4. American Academy of Orthopedic Surgeons
5. DOCARE International
6. Concern America
7. Society of Gynecologic Oncologists
8. International Association of Physicians in AIDS Care.

### National Secretariats

In July 2008 Outreach for National Secretariats and continued outreach for Chapters. A special Request for Applications (RFA) was posted on the homepage of iCons in Medicine.

**(See Appendix G for the National Secretariat RFA)**

In May 2008, iCon Bosnia became the first approved National Secretariat, signing in person at the CIR (**Figure 3 & 4**)

**Figure 3**

**Figure**

**4**



*Above: Nedret Mujkanović, MD and William Kennedy Smith, MD signing the National Secretariat agreement for iCon Bosnia*



*Above: UKC and CIR staff after the signing of iCon Bosnia*

In the past year, iCons in Medicine has registered a total of seven National Secretariats. Three of which were introduced to the program via connections with the NAAMA Chapter:

- United States- *iCon US*, housed by: The CIR (iCons International)
- Bosnia- *iCon Bosnia*, housed by: University Clinical Center (UKC Tuzla)
- Ireland- *iCon Ireland*

- Egypt- Alexandria Faculty of Medicine - Clinical Research Center
- Jordan- Faculty of Medicine/Jordan University
- Palestine-Telemedicine & E-Health Training Center
- Syrian Arab Republic- *iCon Syria* University of Aleppo

CIR staff traveled in mid-April 2008 through the Western Balkans in an effort to assess health care establishments as National Secretariats in the iCons in Medicine program. Nine locations were visited within Serbia, Montenegro, Bosnia and Herzegovina, Macedonia and Croatia during this visit. As a result of these visits, the following have expressed an interest in becoming a National Secretariat:

- Serbia- Klinicki Centar Srbije
- Croatia- Klinicka Bolnica Osijek
- Macedonia- Institut za Radiologiju
- Colombia- Colombian Telemedicine Center

Through the iCons Teleconsultation Advisory Board (iTAB), the following countries have been suggested to approach for National Secretariats due to a relevant contact in the nation:

- South Africa
- Uganda
- Kenya
- Nigeria
- Albania
- Argentina
- Ecuador
- France
- Georgia
- Germany
- India
- Kosovo
- Pakistan
- Russia
- Saudi Arabia
- Scandinavia
- Yemen



Recruitment efforts for Member Organizations are progressing.

**Current Member Organizations:**

- University Clinical Center (UKC Bosnia)
- KB Zenica (Bosnia)
- iCons International (USA)
- Dom Zdravlja Kladanj (Bosnia)
- General Hospital in Gracanica (Bosnia)
- Project Hope (USA)
- DZ Kladanj (Bosnia)
- International Radiology Exchange (USA)
- Oguaa Orphan Aid International (Ghana)
- University of Aleppo (Syrian Arab Republic)

The iTAB continues to meet and members are contacted individually as needed. This board is comprised of leaders in the telemedicine industry and attends regular teleconferences that were held to discuss topics such as:

- Developing the certification criteria
- Developing training
- Reviewing data sets for QI/QA, outcome measures and suggest focus for ongoing research
- Identifying and recruiting individuals to participate in the program in the United States and abroad
- Creating an iCon teleconsulting handbook

**Functionality & Usability Refinements**

Additional administration features were added to allow Chapter and Member Organization leaders to manage their organization's information and member registration. These are inclusive of:

- Active Case Viewing: Although they are not able to add or change communications within the case, administrators are able to view all case information, documents, images, and communications.
- Country Approvals: Administering ability to switch National Secretariats for Chapters and Member Organizations within a region.
- Reports: A section that enables administrators to create reports to track Volunteer count, Requestor Count, Volunteers by Specialty, Consults by Specialty, and Consult Requests by Country.
- iCon Surveys: Surveys have been written to solicit feedback from Requestors and Volunteers on their initial registration, software installation, and first case consult. The survey link appears on the user's homepage after completing their first consult. Administrators can view the actual surveys, as well as completed surveys by user from the iCon Surveys link.

- Bugs/Enhancements: Administrators can enter problems or bugs in the system, as well as track current changes underway to the system. This section describes the issue, along with the current status, and allows users to add comments to each issue as it progresses.
- iCon Chapter Leader Menu: The Homepage for chapter leaders has been updated to alert them to any new member requests waiting for approval, and provides a link to User Management for them to review and approve members.
- My Members: The My Members page has been created for Chapter Leaders to view their membership, and can be accessed via the link from the left menu item. From this page, Chapter Leaders can easily view their membership, filter by approval status, view member details, and provide one-click approvals for new members.
- My Organization: The My Organization section was created to allow Chapter Leaders to self-manage parts of their Chapter, such as the mission statement, as well as to whom e-mail notifications of new members should be directed.
- Changes to Volunteer Case Screens and Case Management: The iCon Cases screen has been redesigned and moved from the iCon homepage to its own page. Links to the Cases screen can be found in the left iCon Menu, as well as from the user's homepage. Cases have now been divided into three sections:
  1. Cases I Have Accepted for Consult (for Volunteers)
  2. Cases I Have Submitted for Consult (for Requestors)
  3. Cases Awaiting Consult

This separates out the cases awaiting consult, and makes it easier for Volunteers to browse them and select cases, and keeps the cases they have selected for consult separate and easy to locate. With this design, Volunteers will see both their accepted cases and cases waiting for consult without having to change any sort criteria on the page.

### **Aesthetics of the system**

In April 2008 the website was redesigned to be more user friendly and aesthetically appealing. Website content was added, updated and streamlined to provide a better user experience throughout the system along with a Website redesign. **(See Appendix A).** A few of these changes include:

- Application buttons: Application buttons for joining iCons in Medicine, forming a Chapter or Member Organization, and the National Secretariat RFA were installed on the homepage for easy access by viewers.
- Membership Directory : A membership directory, searchable by name, country, or membership level was implemented and listed as a tab in the top bar.
- Meet the Members: A "Meet the Members" section was added to the homepage. It displays revolving headshots of members with their name, specialty, and location which are pulled from member profile pages.

- Online Demonstration: A five minute video demonstration of the “iConsult” process was created and added to the homepage. No special software or download is needed to view.  
( <http://www.iconsinmed.org/uploads/File/demo/Consulting%20demo.htm>)
- Compelling Visuals: Rotating images of remote areas of the world are shown on the homepage above the brief description of iCons in Medicine.

### **D3: Organize workshops and meetings to expand iCons teleconsultation service and CoPs into underserved areas.**

iCons in Medicine is a telemedicine program that uses the Internet to connect health care providers in remote and medically underserved areas with a network of committed volunteer specialty physicians who act as consultants on difficult cases.

On Thursday March 27, 2008, the Center for International Rehabilitation (CIR) presented iCons in Medicine, as part of a two-hour continuing medical education (CME) course during the Chicago Medical Society Foundation 2008 Annual Midwest Clinical Conference (MCC). The Conference served as an educational forum for Chicago health care professionals and included medical professionals from more than 50 specialty and ethnic medical societies. CIR staff and telemedicine expert Dr. Ron Merrell presented the iCons in Medicine program during a course titled “Humanitarian Relief through International Telemedicine — Information Technology to Build Global Bridges in Medicine.” Chicago Medical Society President Dr. Saroja Bharati moderated the event, and speakers included Ronald C. Merrell, M.D., FACS from Virginia Commonwealth University and Nikola Prvulov, Fields Operations Manager for the CIR.

Dr. Merrell, who is a pioneer in the field of telemedicine, opened the session with a presentation on “International Telemedicine for Humanitarian Goals.” His long history as advisor and investigator for NASA and the Army offered the audience a glimpse into the research work he has done which emphasizes management of medical events at a distance including extreme environments. Dr. Merrell addressed the scope of international and humanitarian medical need and the potential of current technology, while highlighting the accomplishments of telemedicine for humanitarian purposes.

Mr. Prvulov continued the discussion on the benefits of telemedicine and talked to the audience about his experiences working in the field in limited-resource environments. Mr. Prvulov, who has distributed wheelchairs and prosthetic devices to people living in the Balkans and the Middle East, stressed the need of a technological solution that would circumvent the problems inherent with crossing geographical borders.

Both Dr. Merrell and Mr. Prvulov introduced CME participants to the iCons in Medicine program. The CME participants were invited to join the iCons program, and Dr. Merrell emphasized the program’s ability to expand treatment options for patients who otherwise would not have access to specialty care.

This event marks the second iCons in Medicine presentation in the Chicago area. In September 2007, more than 100 members of the medical community attended the event

at Northwestern University. Participants from this event were also invited to join the iCons in Medicine community.

In May 2008, the Center for International Rehabilitation (CIR), together with the Chicago Medical Society (CMS), the National Arab American Medical Association (NAAMA), and the Iraqi Medical Sciences Association (IMSA) officially launched iCons in Medicine at a meeting held at Northwestern University in Chicago.

The daylong conference, entitled "Telemedicine Support for the Iraqi Health Sector: Building Bridges through Humanitarian Relief" addressed how to employ telemedicine, communications technologies and an international workforce to strengthen the health sector in Iraq. **(See Appendix H for meeting materials)** It was the appropriate venue to introduce iCons in Medicine given that a special focus for outreach during the program's first year will be Iraq and other countries in the Middle East.

The event took place in conjunction with the visit to the United States by Dr. Salih Al Hasnawi, Minister of Health of the Republic of Iraq, and was attended by 85 professionals who represent a distinguished cross section of leaders in the field of telemedicine. A two-hour plenary session led by Jay Sanders, MD, President and CEO of The Global Telemedicine Group, included presentations from:

- Riad Al mudallal, MD, (President, IMSA) who discussed the potential for success for establishing a telemedicine link with the Iraqi health care system.
- Dr. Salih Al Hasnawi (The Iraqi Minister of Health) who spoke about the current health care situation in Iraq and stressed the increased burden on resources as impeding access to health care.
- Dan Sudnick, PhD (Chief Financial Officer of Tragedy Assistance Program for Survivors) who discussed the existing telecommunications infrastructure in Iraq.
- Naeema Al Gasseer, MD (The World Health Organization Representative in Iraq) who spoke about the more recent success of the Iraq Ministry of Health.
- Colonel Ron Poropatich, MD (Deputy Director of the Telemedicine and Advanced Technology Research Center) who discussed the U.S. Army's experience with store-and-forward telemedicine technology.
- Nabil Khoury, MD (President, NAAMA) and William Kennedy Smith, MD (President, CIR) who introduced iCons in Medicine.

**(See Appendix I for photos of the opening plenary)**

At the close of the plenary, invited participants broke up into individualized working groups. The workshops were organized in five key tracks, each of which was led by a Rapporteur:

- **Public Health**- Eric Rasmussen, MD, Innovative Support to Emergencies, Diseases and Disasters
- **Health Care Delivery**- Rabih T. Torbay, International Medical Corps
- **Refugee Assistance** - Emmanuel d'Harcourt, MD, International Rescue Committee

- **Medical Education and Training** - Mike Brennan, MD, Medical Alliance for Iraq and Gary Selnow, PhD, WIRED International
- **War Wounded**- Tammy Duckworth, Illinois Department of Veterans' Affairs

**(See Appendix J for photos of the workshops)**

The goal of the workshop participants was to discuss and debate ideas as to how telemedicine and communications technologies (i.e., store-and-forward technology, high-bandwidth synchronous connectivity, distributed learning, cellular technology, web-based approaches, etc.) can be applied to the Information Communication Technology (ICT) infrastructure in Iraq within the track area. Once multiple ideas were generated, participants prioritized the strategies to determine the top five potential solutions and then attempted to develop those five ideas into potential programs or projects by focusing on best practices, appropriate use of resources and effective partnerships. After the workshops concluded, the plenary reconvened to share the outcomes of the day. Conrad Clyburn, Director of Emerging Technology at Georgetown University in Washington, DC, addressed the closing plenary by first introducing Pat Patierno, Executive Director, Bureau of Public Affairs, U.S. Department of State. Mr. Patierno discussed the International Trust Fund for Demining and Mine Victims Assistance (ITF). The ITF model of international cooperation and co-funding was presented as a possible model for building a similar fund to assist health care in the Middle East. Mr. Patierno was followed by each Rapporteur who presented a summary of their group's ideas.

**(See Appendix K for photos of the closing plenary)**

Program organizers believe iCons in Medicine will build bridges and foster ties within and around that fractured region by making the highest quality medical expertise readily accessible via available technology and without regard to religion, race or politics.

Volunteers from the Chicago Medical Society, the National Arab American Medical Association and other medical organizations from around the world who serve as the staff of the iCons in Medicine program have agreed to provide free assistance and consultation on a minimum of three cases per year.

The conference and progress of the iCons in Medicine program has received substantial media coverage, including articles featured in *JAMA*, *The Chicago Tribune*, **(See Appendix L for articles)** and a number of other publications.

#### **D4: Continue work on disability rights using IDEAnet for reporting applications.**

As reported in the previous report, the *IDRM: Regional Report of Europe* (the fourth regional report of the IDRM project and the first report of its kind to be published following the passage of the International Convention on the Rights of People with Disabilities (CRPD)) was released in December 2007. Researchers from 14 European countries contributed to this report that outlines the level of inclusiveness of people with disabilities across a wide geographical region. Researchers organized individual

country launches of the report(s) which involved numerous stakeholders including government officials, policy officials, disability activists and human rights organizations.

The last of the country launches took place in April 2008. In Madrid Spain on April 28, 2008, the Spanish launch was held on the premises of Fundación ONCE in cooperation with the Spanish Ombudsman and the CERMI (Spanish National Council of Disabled Representatives). The launch of the report was the start to a Human Rights and Disability seminar, which included a roundtable discussion focussed on some of the main challenges of the CRPD, just a few days ahead of its coming into force, as Spain is one of the countries that has ratified the new Convention.

The presentation of the Spanish report was made by the researcher Leonor Lidón, who offered some of the major findings from the European Regional report to the audience, including the different legal barriers people with disabilities have to face in Spain, like the incapacitation scheme: exclusions to the right to vote, adoption, or being a member of a jury. She also marked as challenges the need to increase the level of participation of students with disabilities in higher education, the need to increase the activity rate in the employment market, the need to improve the level of accessibility. In other words that disability cannot be an element of exclusion in society at large.

Approximately 100 individuals with different backgrounds attended the Conference, including:

- Representatives from Spanish and local government and other officials
- Disability and human rights NGOs
- Universities
- Disability advocacy organizations
- Media

On November 12, 2008, the International Disability Rights Monitor (IDRM), was presented in Seoul, South Korea, by the IDRM Greek Researcher Eirini-Maria Gounari, at a conference regarding the disability anti-discrimination legislation that was recently passed in South Korea. The conference, organized by the Korea Disabled People's Development Institute (KODDI), brought together individuals with disabilities, their families, disability organizations, and policy makers within the country to discuss implementation and monitoring of this new legislation.

As a recognized leader in the field of disability rights monitoring and reporting, the IDRM's successful model, along with experience and expertise gained to date, was shared with conference participants to aid in the development of an effective monitor in South Korea. The presentation offered a close insight of the unique monitoring tools that the IDRM project has to offer to the disability-related NGOs and advocates present, in the hopes that their country will participate in the project.

The conference was of utmost importance, as it provided to the participants with an overview of the IDRM project and its potential for their country, as well as a comparative analysis of the Americans with Disabilities Act (ADA) and with their newly adopted legislation. The presentation also gave an opportunity for interventions

by a member of the Korean Legislation Committee, the director of disabilities discrimination team of the National Human Rights Commission, and others. Members of the disability community were also able to openly express their views and address questions to the panellists.

Mary Keogh, the IDRM Ireland Coordinator was invited to join the Academic Network of Experts on Disability (<http://www.disability-europe.net/?jsEnabled=1>). She participated in a meeting in Brussels where the IDRM was presented as a model for monitoring. Subsequently, she has been asked to join an expert group on Europe's next disability strategy and will be participating in a meeting in the summer of 2009.

## **B. Research and Development of Advanced Distributed Learning Materials**

### **R1: Research existing literature and tools available for program and web design for Open Content development.**

In order for information to be shared by all individuals who may have an interest in the material presented, care must be taken to ensure that the materials are presented as “Open Content.” The term “Open Content” is often used interchangeably with “Open Source,” i.e., software for which the code is made publically and freely available for use by anyone who wishes to do so.<sup>34</sup> V.S. Prasad stated “The Open Courseware concept is based on the philosophical view of knowledge as a collective social product.”<sup>35</sup> As such, it is of great import that these materials created by the public be made available to them.

A number of recent studies (notably Larsen and Vincent-Lancrin (2005)) demonstrate that the impact of an innovation and the information or Open Educational Resources (OERs) associated with it have a greater impact when this information is shared freely.<sup>36</sup> Further, through the open distribution of information, individuals are influenced to work collaboratively more frequently, and thus create a stronger learning community.

Per Walker, OERs must be “convenient, effective, affordable, and sustaining and available to every learner and teacher worldwide” in order to truly be considered “Open.”<sup>37</sup> Further, Daniel states that these materials must conform to the “4 As : accessible, appropriate, accredited, and affordable.”<sup>38</sup> By making materials available online freely, they surely can be seen as as affordable as their only cost is associated primarily with their creation and/or maintenance and updating. However, as noted by Downes, there is a distinct difference between materials that are “affordable” and those that are “free.” Per Foote, the “Four Freedoms: Freedom to copy, Freedom to modify, Freedom to redistribute, Freedom to redistribute modified version” should be applied to

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<sup>34</sup> As defined by Princeton University.

<sup>35</sup> As noted by Downes, S. (2007).

<sup>36</sup> Ibid.

<sup>37</sup> Walker (2004) as noted by Downes.

<sup>38</sup> Daniel (2006) as noted by Downes.

materials distributed as OERs in addition to their provision being at little or no cost to those accessing the materials.<sup>39</sup>

Ensuring accessibility of OERs is a matter of creating materials that conform to standards for creation of Sharable Content Objects (SCOs) as per the Sharable Content Objects Reference Model (SCORM). SCORM offers a set of “standards and specifications adapted from multiple sources to provide a comprehensive suite of e-learning capabilities that enable interoperability, accessibility and reusability of Web-based learning content.”<sup>40</sup>

To ensure that OERs and SCOs are easily accessible, a number of web design tools are needed. Though it cannot be verified, through a study of web users, the so-called “three-click rule” (i.e., that if individuals cannot access the information that they are seeking within three mouse clicks they will abandon their search and seek the information elsewhere) still offers assistance when planning the navigation tools needed for a website. Similarly, satisfaction ratings indicate that failure to complete the tasks assigned for completion do not correlate directly with individuals reported level of satisfaction with their experience of a website. Porter (2003) notes that information systems should be created with the user in mind. Design recommendations such as global navigation elements on every page and creating a navigation hierarchy which is shallow and wide are pertinent to ensure the utility of a website.

A recent report in *The Economist* states that Dr. Bernardo Huberman of HP Labs has been working to identify a number of “laws of web surfing” including the number of times an average user will go from website to website to find information before giving up their search – a variation on the “three-click rule.” Dr. Huberman has also examined the “winner-takes-all” phenomenon, by which a few websites on a given topic or which provide information within a given category receive the most attention from users while others are ignored almost entirely.

During planning for design changes to the iC Icons in Medicine website, these elements have been considered, and will continue to be central to design decisions. The navigation tabs which are present on each page of the site, for example, ensure that users are able to return to previous sections of the website easily if they realize they are not in the correct area.

## **D1: Continue to develop and/or refine educational materials.**

As reported previously, Open Content methodologies were employed during the development and refinement of course content for the training of Iraqi Hospital Based Physicians (HBPs). These HBPs received training in February 2008 (detailed in Section C-D2 of this report). Instructors were able to collaborate using the CIR’s online platform on the IDEAnet website to facilitate content development, sharing, archiving, and dissemination.

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<sup>39</sup> Foote (2005) as noted by Downes.

<sup>40</sup> Per The Office of the Under Secretary of Defense for Personnel and Readiness.



To ensure that these materials are broadly distributed as possible, in February 2009, CIR VP of Programs, Hector Casanova, traveled to Cuba. Mr. Casanova visited the Centro Nacional de Ortopedia Técnica (CENTOT) where he was able to fit several patients with lower limb amputations and offer information and training to the local service providers. Utilizing several Hosmer components and the same casting system used for the transtibial amputees, Mr. Casanova was also able to fit a patient with a transradial amputation. During the visit, Mr. Casanova observed that the Cuban service providers had only a drawer of various hands and hooks, but not a complete compatible set of prosthetic components. Offering these providers web-based training on the CIR prosthetic technologies would prove invaluable. These techniques offer an opportunity for local manufacture of prosthetic components using local materials, allowing for significantly lower costs without any sacrifice of functionality.

All the aforementioned materials developed by the CIR for training purposes are SCORM-compliant. Per the Office of the Under Secretary of Defense for Personnel and Readiness, the Sharable Content Objects Reference Model (SCORM) is a set of “standards and specifications adapted from multiple sources to provide a comprehensive suite of e-learning capabilities that enable interoperability, accessibility and reusability of Web-based learning content.” The “sharable instructional objects” (or SCOs) specified by SCORM, allow for materials to be shared, used, and reused without requiring a standardized computer configuration, operating system, or browser (Fletcher, Tobias, and Wisher, 2007). Thus, SCORM promotes the open dissemination and use of SCOs to allow for more effective Advanced Distributed Learning (ADL).

Per Booth (2004), SCORM has three parts: 1. Metadata, 2. Interface, and 3. Packaging.

- Metadata specifies which portions of information, such as the author, title, and language should be included. This information allows SCOs to be added to other databases and tagged in a standard fashion so that they are more easily searchable.
- The Interface is a set of commands that allow for communication between the Learning Management Systems (LMS) and the SCO. Interface information often includes a protocol for starting the SCO, as well as a list of commands that allow the learning object to communicate with the LMS.
- How a SCO is packaged (the Packaging) defines the way that the files are named and which folders contain what information.

The standardization of information contained in the metadata, interface, and packaging make items created as SCOs more easily searchable and available to users.

The SCORM standard has been widely implemented, and its use allows for tests or other documents to be created as SCOs and delivered using a variety of LMS (Booth, 2004). Further, SCORM allows for the creation of content using an editor from one supplier to be exported as an SCO, and then delivered using a LMS from another supplier.

IDEAnet Project Groups have implemented the use of SCORM, allowing members to upload and share SCORM-compliant SCO documents. In a SCORM project group, all uploaded documents are automatically converted to a SCORM-compliant package with appropriate metadata. The CIR will continue to offer this capability within the IDEAnet

Project Groups. The CIR continues to employ Moodle, a SCORM-compliant LMS, as its course management software for distance education programs.<sup>41</sup>

## **D2: Continue to encourage the collaboration of Open Content methodologies to develop and disseminate materials**

The CIR is currently exploring two new methods of providing training materials pertaining to the CIR fabrication methods: through the iCons in Medicine website, as well as through the Open Prosthetics Project website. Each of these options has benefits and drawbacks, and after further evaluation, and it may prove most beneficial to utilize both websites to ensure that the materials are available to the widest possible audience.

Distribution through the iCons in Medicine website will allow the CIR to regain total control of the materials, and ensure that they are distributed properly. Due to the login process of the website and the option to create “Project Groups,” the iCons website allows for the materials to be distributed openly, but only to those individuals for whom the information is appropriate (i.e., those who do not possess adequate training in the area). It is important that those gaining access to these training materials have a n understanding of biomechanics and prosthetics fabrication and are licensed or certified to provide care in order to prevent possible injuries to patients due to poorly-fitted prostheses.

In addition, a request has been made by Jonathan Kuniholm, President of the Open Prosthetics Project (OPP), to post the CIR prosthetic fabrication training materials on his website. OPP is a notable online source for training materials related to prosthetic fabrication, appears in the first page of Google search results for the term “Prosthetics,” and has a small but very dedicated established community of users. Despite the benefit of its having an exiting audience, using only the OPP website for dissemination of training materials has a number of drawbacks - the first being that the information provided is not always SCORM-compliant. While the information provided on the OPP website is often quite valuable, the manner in which it is presented<sup>42</sup> limits its application possibilities. It is also important to note that the information presented in a fully open manner without any limitation regarding who can access it. Thus anyone can download, adjust in CAD software, and submit materials from the OPP to a manufacturer. This has the potential to create a situation where individuals with limited or no training and/or understanding of the underlying biomechanics involved are attempting to fabricate prosthetic or orthotic devices and provide care.

The CIR is currently in the process of determining which of these two websites or combination of them is most appropriate for dissemination of these materials, and which will prove most beneficial for the delivery of prosthetic and orthotic training materials.

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<sup>41</sup> Moodle is a free system that can be employed to conduct courses online, as well as to supplement face-to-face interaction. In addition, it is fully scalable and allows for deployment to a wide or very tightly focused audience. <http://moodle.org/>

<sup>42</sup> Most frequently the information on the Open Prosthetics Project is posted in Wiki entries or as commentary in a web-forum, not in the form of training materials that are available for download.

## C. Research and Delivery of ADL

### **R1: Research and evaluate existing empirical literature of appropriate locales for online delivery of educational services.**

Per Fletcher, et al. Advanced Distributed Learning (ADL) was undertaken with the ultimate goal of making educational, training, and continued education materials available at any time in any location. Further, ADL emphasizes the importance of access and individualization of materials to ensure that the content distributed is as useful as possible to its audience. The “sharable instructional objects” shared through ADL are specified by the Sharable Content Objects Reference Model (SCORM), which makes it possible to share, use, and reuse the materials presented without requiring a standardized computer configuration, operating system, or browser.

The criteria put forth by Fletcher, et al. for ensuring that instructional objects are fully usable through ADL include that they must be: 1. Accessible to all learning systems, 2. Interoperable across technology platforms, 3. Durable across changing versions of operating systems, and 4. Reusable in the development of new materials. In addition to these technology-focused requirements it is important to note the eight cross-cultural considerations that must be made when preparing instructional materials and course for the internet, as put forth by Rogers, et al. (2008). These include ensuring that the materials presented give thorough consideration to the audience with regard to: 1. Language, 2. Culture, 3. Technical Infrastructure, 4. Local Versus Global Consideration, 5. Learning Style, 6. Reasoning Pattern, 7. Matters Pertaining to High- and Low-Context, and 8. Social Context. These criteria serve as a guide for the CIR when developing metrics to evaluate the most appropriate blend of educational components for a given group of students and being mindful of their cultural context.

Additionally, per Preece, if materials are intended for online distribution, especially to a disparate audience, they must be created with attention paid to a number of key factors to ensure their usability. These include: 1. Dialog and Social Interaction Support (the ease with which commands can be executed), 2. Information Design (how easy to read and interact with a website is), 3. Navigation (the ease with which a user can find the information they are seeking), and 4. Access (requirements for using a website, this is particularly important if a site requires a high-bandwidth connection).

By taking into account different learning styles and levels of access to technology, the CIR is working to create an ADL program that caters to region-specific considerations. For example, in the Middle East, three different areas of consideration should be accounted for when developing instructional content for a local audience – language, religion and culture, and pace of learning delivery.<sup>43</sup> In order to improve the effectiveness of the delivery of information, the authors of the guidebook created by the Commission for Academic Accreditation of the United Arab Emirates in conjunction with its Ministry of Higher Education and Scientific Research suggest using short

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<sup>43</sup> Per the guidebook from the Commission for Academic Accreditation of the United Arab Emirates and its Ministry of Higher Education and Scientific Research.

sentences and where appropriate, illustrations and animations to explain concepts. The guidebook stresses that concepts covered earlier should be repeated, either in summary or in detail, at places in the course where knowledge of these concepts is a prerequisite. Per Fletcher, et al. this type of attention with regard to the needs, abilities and backgrounds of students is of great import, and is an area ripe for research.

These recommendations are consistent with Rogers, et al.'s points on learning styles and reasoning pattern considerations which can be summarized as follows: 1. Explicitly describe the course's educational value; 2. Offer optional elements to help learners be successful, such as inviting students into a social network; 3. Consider the knowledge and skill level of English required; 4. Communicate important messages through high context means; 5. Avoid colloquialisms and local humor; and 6. Make topic information available ahead of time for students to review. By analyzing and incorporating these lessons into its content development processes, the CIR is better suited to effectively meet the needs of its students, better understand the target audience, and create content that matches the educational values of learners from a variety of regions.

## **R2: Conduct literature review and evaluation of cost-effective delivery options including those based on licensing, consulting, tuition, and train-the-trainer methodologies.**

Per Park and Hyun, the traditional model of lecture-based instruction is quickly being replaced by an entirely web-based approach focused on a collaborative learning strategy. By grouping participants in small teams based on their ability, collaborative strategies make the members of a team not only responsible for learning what is taught, but also for helping others to understand the material. When a collaborative learning model is employed online, the participants gain access to a number of web-based tools that may not be available through a more traditional approach. Through Web-Based Collaborative Learning (WBCL), learners are able to "access instructional materials and communicate with each other without time and space limitations." (Park and Hyun). It is important to note that WBCL programs may be discussion-based, seminar-based, or simulation-based, depending on the material being presented, and the needs of the learners. Depending on the type of WBCL model used, a variety of different asynchronous and/or synchronous tools may be employed, often including e-mail, video-sharing, chat rooms, forums, or making files available for download.

Further, a recent comparison of one-on-one tutoring and classroom instruction by Benjamin Bloom found a student achievement difference of two standard deviations in favor of tutorial instruction.<sup>44</sup> Fletcher, et al. note, however, that it is not possible to provide a single human tutor to every student and maintain a cost-effective model. Through the use of educational technologies that allow the material to be tailored to the needs of the student, this type of direct attention is fully realizable and creates an educational delivery system that is not only affordable, but globally accessible.

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<sup>44</sup> Bloom, B. (1984) as per Fletcher, et al.

The importance of the manner in which users interact with the information is presented and how “book knowledge is assimilated as practical knowledge” is examined in Hara. One theory of how users interact with information, the “Actor-Network Theory,” describes the relationships within social networks and the manner in which scientific knowledge is formed and shared by scientists working in labs.<sup>45</sup> The theory posits that individuals are not only using a medium to communicate with one another, but are interacting with the medium as well. Thus, in web-based interactions the Internet functions as a learning aid in addition to providing a forum that allows participants to construct their own knowledge and interact with others in their field of work.<sup>46</sup>

The findings of a study conducted by Fletcher, et al. (1990) to assess the costs needed to achieve a common instructional outcome suggested that the most cost-effective approaches were computer-based instruction and peer tutoring. Initially tutoring by professionals, peer tutoring, reducing class size, increasing instructional time, and using computer-based instruction were compared. While the computer-based approach was found to ultimately be the most cost-effective, other studies have suggested that a combination of peer tutoring and computer-based instruction may be more beneficial than computer instruction alone.<sup>47</sup>

Historically, the CIR has used this type of “blended learning” model for instruction of prosthetic and orthotic training materials. The iCons in Medicine program will employ similar tools, but rely much more on web-based interaction than on face-to-face meetings in order to improve patient care. Though the program offers for communication between healthcare workers and specialty physicians via teleconsultation, it can be seen as a type of peer-to-peer interaction by which healthcare workers in remote and underserved areas are able to gain knowledge and information to provide quality care.

Since 2002, the CIR has implemented distance learning educational programs in prosthetics and orthotics in Latin America and the Balkans. Per the Prosthetics and Orthotics Programme Guide, training should be conducted within the country’s education system and done in association with an existing educational facility, following the recommendations of the International Society for Prosthetics and Orthotics (ISPO). While the CIR continues to conduct courses through blended learning (both in-country and through distance learning), it is not always possible to offer instruction in the areas where it is most needed. In conflict-affected regions or areas where travel costs would be prohibitive, teleconsultation and WBCL models offer a cost-effective alternative means to offer training.

To ensure the continued distribution of existing CIR prosthetic and orthotic training materials, the CIR has licensed the educational content in P&O to the UKC in an effort to assist their capacity building as a regional institution for P&O education. Further, the CIR has an ongoing relationship with the BiH Ministries of Health and Education through which a distance-learning program has been developed to be adapted and incorporated into their national curriculum. Though a memorandum of understanding

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<sup>45</sup> Callon (1995) and Latour (1987) as per Hara.

<sup>46</sup> Ibid.

<sup>47</sup> Fletcher, et al. (2007)

(MOU) presented to Northwestern University Prosthetic and Orthotic Center (NUPOC), the CIR will also be licensing a portion of the training initiatives and collaborating in areas such as distance learning; hands-on workshops and continuing education; and conferences, workshops, and presentations.

**D1: Stage regional IDEAnet conferences and meetings of experts in disability and rehabilitation in the Western Balkans, the Middle East and other regions.**

As previously reported, in September 2007, the CIR staff traveled to Amman, Jordan where they worked to establish new relationships with rehabilitation organizations, facilities and schools in the region. The CIR used this opportunity to introduce its technologies to various P&O clinics, such as The Royal Rehabilitation Centre, King Hussein Medical Center, Al Hussein Society, Higher Council for the Affairs of Persons with Disabilities and the Hashemite Charitable Society.

In this reporting year, the CIR conducted two hands-on workshops in Kabul, Afghanistan and another in Amman, Jordan.

From May 3 to May 6, 2008, the CIR Vice President of Programs, Hector Casanova C.P., organized a hands-on workshop in Kabul, that offered training for local practitioners on appropriate prosthetic technologies developed by the CIR. The purpose was to train several prosthetic technicians at the Kabul Orthopedic Organization (KOO). The KOO is the only Afghan non-governmental organization providing rehabilitation services to individuals with disabilities in Kabul. This workshop allowed the CIR to introduce its innovative technologies to prosthetists working in Kabul and it was well received by the KOO. Integrating these technologies will benefit the long-term sustainability and quality of services provided to the war wounded population in Afghanistan.

The WRA Victim Assistance program in Afghanistan is currently providing technical assistance to the KOO. The WRA's local representative, Kristen Leaden, indicated that they plan to collaborate with the CIR to implement an outreach program utilizing the CIR's Vacuum-Based Impression and Alignment System (VBIAS).

While in Kabul, Mr. Casanova also met separately with representatives of the Afghanistan Ministry of Public Health, Kabul Medical University, and the USAID Office of Health, Population and Nutrition. To expand the CIR's current technology transfer efforts, Mr. Casanova introduced those he met with to the iCons in Medicine program. He explained that it is a telemedicine program which uses the Internet to connect health care providers in remote and medically underserved areas with a network of committed volunteer specialty physicians who act as consultants on difficult cases.

From June 22 to June 26, 2008 the CIR worked in collaboration with the Al Hussein Society, Amman Jordan to conduct current technology transfer workshops regarding prosthetic rehabilitation and wheelchair manufacture. The workshops were aimed at transferring appropriate rehabilitation technologies, promoting interaction between rehabilitation professionals, and providing solutions through the development

of tools, core curricula, and strategic plans that address the needs of people with disabilities and the war-wounded population in the Middle East.

Prince Mired Bin Raad Bin Zeid Al-Husseini, an active advocate for de-mining and rehabilitation in Jordan, opened the workshops by addressing a plenary comprised of national and international organizations and university representatives. Among those included were the World Health Organization, the UN Refugee Agency, the University of Jordan, and the King Hussein Royal Medical Services. Additional presentations regarding the week's structure and goals were presented before the group assembled into the separate workshops.

The focus of each workshop involved technology transfer, education, and training for rehabilitation professionals. This was accomplished via lectures and hands-on training related to the CIR technologies and programs. Participants included a combined total of 29 practitioners from multiple clinics within seven Middle Eastern regions: Afghanistan, Egypt, Jordan, Iraq, Lebanon, Syria, and the Palestinian Occupied Territories. One workshop specifically concentrated on the transfer of prosthetic technologies developed by the CIR's Rehabilitation Engineering Research Center (RERC).

Prosthetists received training using the CIR's transtibial prosthetic fabrication system known as the Vacuum-Based Impression and Alignment System (V-BIAS) on locally identified amputee subjects who posed difficult cases. Initially participants were skeptical of the CIR system's ability to produce the results it claimed, however, after the practical training, doubts were dismissed and replaced with enthusiasm. A complete CIR system was donated to each participating clinic to conduct a quality assurance follow-up study with patients in their own country.

The other workshop centered on aspects related to appropriate wheelchair provision including: assembly, assessment, fitting, user training, and follow-up. Physiotherapists and technicians received training on service provision for the CIR-Wheelwind adult wheelchair and the CHIQUI pediatric wheelchair; adjustable wheelchairs designed to meet a wide range of user needs. A total of 75 wheelchairs were donated by the CIR to the Al Hussein Society.

All attendees were also introduced to iCons in Medicine: a humanitarian telemedicine program that uses the Internet to connect health care providers in remote and medically underserved areas with a network of committed volunteer specialty physicians who act as consultants on difficult cases. This program expands treatment options for patients who otherwise would not have access to specialty care.

At the conclusion of the week, the plenary reconvened and Princess Majda Raad Bin Zeid addressed the group and bestowed training certificates to all participants. Several expressed interest in having the CIR conduct supplementary training in their homelands. Additionally, the University of Jordan indicated a desire to have the CIR conduct this training as part of their curriculum.

## **D2: Deliver educational materials in post-conflict areas as ancillary funding permits.**

A third track of Iraqi training requested by the IMoH was conducted for Hospital Based Physicians (HBP). This training took place in two sets of two-week trainings (**See appendix M & N for training learning goals and schedule**) - the first in December, 2007 and the second at the end of February, 2008. A total of 16 Iraqi HBPs attended these sessions that focused on specialized content areas of rehabilitation: spinal, stroke and traumatic brain injuries, limb fitting and amputee, and general rehabilitation.

The trainees underwent an intensive two-week course in the area of Stroke and TBI Rehabilitation. They were attentive to the material presented, asked questions and were actively involved in all aspects of the training. All were interested in lectures given and actively participated during theoretical and practical sessions. Trainees showed a great interest for the training sessions in all four areas of Stroke and TBI Rehabilitation: medical intervention, management of unconscious patient, stroke rehabilitation technique and psychosocial care.

The trainees gave the instructors information about the treatment, techniques and methods in specific fields of stroke and TBI rehabilitation used in Iraq. This information helped instructors make the connection between the two systems. The trainees were satisfied with presented material, types of patients chosen for the practical sessions, the type of functional testing, and the diagnostic and therapeutic treatment that was shown to them.

Communication among physician, patient and his/her family was one of the most important topics in this training. The group had very good communication skills and collaborated well with their mentors, other trainees and the UKC medical staff. They were able to solve problems easily during theoretical and practical sessions through proper communication.

Each member of the trainee group communicated and interacted well with the instructor during the theoretical and practical trainings. At the end of the training the trainees showed a high level of communication and interaction amongst themselves especially during classroom discussions, sharing experiences and during practical exercises problem solving difficult cases. Their English skills were at a high level.

The trainees showed a strong ability to transfer information to others. Time spent working closely with them gave the instructors the impression that they will be able to pass new information, knowledge and skills gained during this training to their colleagues/subordinates in Iraq. This group easily adopted new materials and methods presented during the training and will be able to transfer gained knowledge to other physicians in their centers in Iraq.

The group was very attentive and showed enthusiasm in learning and transferring the knowledge and skills acquired to their colleagues, subordinates and patients. They are very interested in learning and upgrading their knowledge in the areas that were not covered with this program. The special emphasis would be on organizing additional long-term training on Neurological Rehabilitation. Follow-up training is therefore



recommended for would upgrade and expand their practical skills and theoretical knowledge.

In general, all of the trainees showed advanced knowledge and skills in the field of Stroke and TBI Rehabilitation. Many of the trainees expressed an interest in the Ph.D. degree program offered at Tuzla University. However, the two-week training period was not sufficient for the instructor team to teach all necessary details for this field of medicine. For further trainings in neurological rehabilitation area, a month-long training session with instruction from a physician, physical therapist and nurse from the same hospital in Iraq is recommended.

## **Key Research Accomplishments**

- Refinement of an outreach plan to recruit National Secretariats, Chapters, and Member Organizations to participate in the iCons in Medicine program.
- Planning of the daylong conference, entitled "Telemedicine Support for the Iraqi Health Sector: Building Bridges through Humanitarian Relief" that aimed at raising awareness of, and participation in, the iCons in Medicine Program, as well as addressing ways of offering assistance in Iraq.
- Development of iCons in Medicine program National Secretariat RFA.
- Development of iCons in Medicine and IDRM YouTube Channels, Facebook Groups and Fan Pages.
- Development of a bi-monthly newsletter to the membership of iCons in Medicine.
- Development of microblogging and blogging websites (e.g., Twitter, WordPress, Blogger, and Vox) for dissemination of update information.

## **REPORTABLE OUTCOMES**

- Completion of successful workshops in Kabul, Afghanistan and Amman, Jordan aimed at transferring appropriate rehabilitation technologies, promoting interaction between rehabilitation professionals, and providing solutions through the development of tools, core curricula, and strategic plans that address the needs of people with disabilities and the war-wounded population in the Middle East.
- Implementation of a "General Member" level to iCons in Medicine where those in the Medical Field may join the program and utilize social networking tools. If they qualify, they may later opt to join the "iConsult" program.
- Completion of training of 16 Iraqi HBPs in February 2008.
- Further refinement and design of the iCons in Medicine website and store-and-forward software application to improve usability.
- Registration of 7 National Secretariats, 6 Chapters, 9 Member Organizations, 84 Volunteers and 18 Requestors in the iCons in Medicine program.
- Collaboration with NAAMA and the iTAB to recruit National Secretariats
- Presenting of a successful daylong conference to launch iCons in Medicine. The conference and progress of the iCons in Medicine program has received substantial

media coverage, including articles featured in *JAMA*, *The Chicago Tribune*, and a number of other publications.

- Continued work with the iTAB, which is composed of leaders in the telemedicine industry who meet monthly in order to create a volunteer support network for the iCons in Medicine program.
- Posting of iCons in Medicine and IDRM YouTube Channels, Facebook Groups and Fan Pages which allows members to comment in a forum, creating an opportunity for feedback and a sense of community.

## **Conclusions**

Historically the CIR has worked to provide technical assistance, education, and training to medical practitioners in medically underserved areas. This year, the CIR continued its shift in geographic outreach by utilizing its experience in the distribution learning materials; conducting hands-on workshops aimed at transferring appropriate rehabilitation technologies; promoting interaction between rehabilitation professionals; and providing solutions through the development of tools, core curricula, and strategic plans that address the needs of people with disabilities and the war-wounded population in the Middle East.

During the past year, the majority of the CIR's efforts have focused on the refinement and development of the iCons in Medicine community, as well as ongoing modification of the store-and-forward software. In order to increase the effectiveness of outreach efforts and garner professional participation, the program has undergone a series of aesthetic improvements in addition to changes to increase its functionality, usability, and ease of navigation. Further, efforts have been made to broaden the scope of the audience of the program and increase interest within a professional as well as a lay audience.

The iCons in Medicine program was officially launched in May 2008 at a daylong conference, entitled "Telemedicine Support for the Iraqi Health Sector: Building Bridges through Humanitarian Relief." The meeting aimed at raising awareness of, and participation in, the iCons in Medicine Program, as well as addressing ways of offering assistance in Iraq.

To date, nearly 300 professionals in the Medical Industry have become members of iCons in Medicine. A third of these participants have elected to join the "iConsult" program to provide and receive teleconsultations through iCons in Medicine. The program has been structured in such a way that participants are organized and recruited via groups within their geographic region. MOUs have been signed with professional medical associations CMS, NAAMA, IMSA, and the UKC to become Chapters in the "iConsult" program. These organizations are advocates of the program, and are currently actively recruiting Volunteers within their associations as well as recruiting National Secretariats. Continued outreach efforts have been made in BiH and Jordan to recruit Volunteers and to enroll health care clinics that would benefit from taking part in the "iConsult" program. It is anticipated that this web-based Knowledge Management system coupled with its global alliance of participating individuals and institutions, will allow for the development and evaluation of a variety of educational and training strategies including but not limited to Advanced Distributed Learning (ADL), Communities of Practice (CoP) and Open Content Development, leading to a more effective and sustainable means of sharing information and knowledge via telemedicine.

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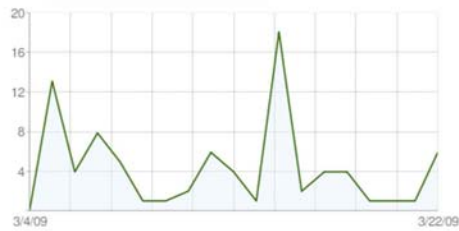
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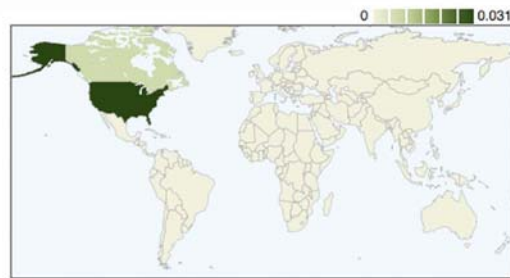
Rogers, P.C.; Tinney, M.V. ; and Gibbons, A.S. (2008) *Cross-cultural knowledge communication in online communities of practice*. International Journal of Web Based Communities, 4, 4, 459-475.

## Appendix A

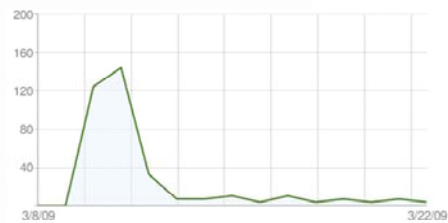
iCons in Medicine  
Views 3/4/2009-3/23/2009



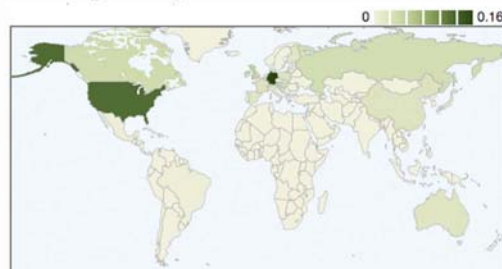
iCons in Medicine  
Popularity 3/4/2009-3/23/2009



The International Disability Rights Monitor  
Views 3/4/2009-3/23/2009



The International Disability Rights Monitor  
Popularity 3/4/2009-3/23/2009



## Appendix B

### iCons in Medicine (left) and IDRM (right) Groups Created on Facebook

**iCons in Medicine**  
Closed

**Basic Info**  
Type: Organizations  
Description: Organizations - Non-Profit Organizations  
iCons in Medicine is a global telehealth and humanitarian medicine volunteer alliance. This network of medical professionals is committed to making the world a healthier place. iConsult, the flagship program of iCons in Medicine, uses the internet to connect healthcare providers in medically underserved areas with specialty physicians who provide expertise, encouragement, and advice on difficult cases.  
There are many ways to participate in iCons in Medicine. You can join as a General Member and network with medical experts, become an iConsult Volunteer and expand treatment options for patients who otherwise would not have access to specialty care, or enroll as an iConsult Requester to request unlimited teleconsultations.

**Contact Info**  
Email: support@iconsinmedicine.org  
Website: http://www.iconsinmedicine.org

**Recent News**  
Center for International Rehabilitation Launches Global Telemedicine Program that Circumvents Barriers to Care and Focuses Initial Efforts on Healing Suffering in Iraq  
"iCons in Medicine," an internet-based volunteer alliance connecting medically underserved populations with physicians worldwide, to be formally introduced at May 23, 2008 meeting attended by Iraqi Minister of Health  
Chicago, IL — The Center for International Rehabilitation (CIR), together with the Chicago Medical Society (CMS), the National Arab American Medical Association (NAAMA), and the Iraqi Medical Society Association (IMSA) today announces the launch of International Consultants in Medicine (iCons in Medicine), a telemedicine program that uses the internet to connect health care providers in remote and medically underserved areas with a network of committed volunteer specialty physicians who act as consultants on difficult cases.  
iCons in Medicine will be officially unveiled May 23 at a meeting to be held at Northwestern University in Chicago and attended by Dr. Saïd Al Hassanawi, Minister of Health of the Republic of Iraq. The day-long conference, organized by a committee of worldwide leaders in the telemedicine field, is an appropriate venue to introduce iCons in Medicine given that a special focus for outreach during the program's first year will be Iraq and other countries in the Middle East. Program organizers believe iCons in Medicine will build bridges and foster ties within and around that fractured region by making the highest quality medical expertise readily accessible via available technology and without regard to religion, race or politics.  
Volunteers from the Chicago Medical Society, the National Arab American Medical Association and other medical organizations from around the world who staff iCons in Medicine have agreed to provide free assistance and consultation on a minimum of three cases per year; the first year alone, the program expects to provide more than 1,000 free consultations to physicians in the Middle East and around the world.  
Participants in iCons in Medicine will be available to provide in-depth information about the program and the state of health care in the Middle East at a press briefing on May 22 from 4 to 5 p.m. at CIR's offices, 211 East Ontario, Suite 200, Chicago.  
"The May 23 meeting, "Telemedicine Support for the Iraqi Health Sector: Building Bridges Through Humanitarian Relief," sponsored by CIR, CMS, NAAMA and IMSA will begin at 8:30 a.m. with a two-hour plenary session in Baldwin Auditorium. Robert H. Lurie Medical Research Center at Northwestern University, that is open to the press. During the session, representatives of CIR, which developed iCons in Medicine, will discuss the groundbreaking program in depth.  
"We are looking forward to unveiling what we believe is a highly innovative approach to humanitarian relief that brings the best of care together with the latest technology," said Dr. William K. Smith, President of CIR. "We also hope to learn directly from the Iraqis ways in which iCons in Medicine can help improve the quality and availability of health care in the region."

**Members**  
Displaying 8 of 30 members See All

Sabina Soultan-Binici, Conrad Clyburn, Chris Spence, Wasilios Katsoulis, Eric K. Naji, Mersha Mirrezaie, Shik Krishna Marmore, Joseph Kunder

**Photos**  
Displaying 5 of 13 photos Add Photos See All

**Links**  
Displaying 2 links See All

Post a link:  Post

**shorttransmission\_demo**  
Source: www.iconsinmedicine.org  
A five minute demo of how iCons in Medicine's flagship program "iConsult" requesting and providing teleconsultations works. ( )  
Posted by You

**YouTube - iConsinMedicine's Channel**  
Source: www.youtube.com  
iCons in Medicine is a global telehealth and humanitarian medicine volunteer alliance. This network of medical professionals is committed to making the world a healthier place. iConsult, the flagship program ...  
Posted by You

**Video**  
Displaying 3 of 6 videos Add Videos See All

Dr. William Kennedy Smith introduces iCons in Medicine by Kate Jackson 1:08 Added about 2 weeks ago

**Applications** Online Friends (1)

**The International Disability Rights Monitor (IDRM)**  
Closed

**Basic Info**  
Type: Organizations  
Description: Organizations - Non-Profit Organizations  
The International Disability Rights Monitor (IDRM) is an international grass-roots research project designed to document and assess the status of people with disabilities worldwide. It represents an ongoing collaboration between the Center for International Rehabilitation (CIR)—a not-for-profit organization that develops research, education and advocacy programs to improve the lives of people with disabilities internationally—and many international and national disability groups. IDRM is the world's only systematic, international disability rights shadow monitoring project focusing on disability rights.  
The primary focus of the IDRM project is a series of regional and themed reports. The regional reports focus on several key areas such as legal protections, education, employment, accessibility and health and housing services for people with disabilities. They include a collection of country reports and also a report card which allows comparison of progress made by countries across the region. Since 2003 the IDRM project has released a landmark series of reports that have been submitted and used, along with official government reports, by the UN Special Rapporteur on disability to judge international compliance with the UN Standard Rules.  
International Disability Rights Compendium:  
Released in June 2003, the Compendium is a comparative analysis of the living conditions and legal protections of people with disabilities in 52 countries around the world and the results of field trips of the IDRM methodology in El Salvador and Nicaragua.  
The Regional Report of the Americas:  
This was the first regional report and was released in August of 2004. It was formally presented to the UN during the 4th Ad Hoc Committee meeting. The situation of people with disabilities is comprehensively described and documented for 24 countries in the region.  
Regional Report of Asia:  
Released in August 2005, this report was presented to the United Nations in during the 6th meeting of the Ad Hoc Committee that debated the proposed international convention on the rights of people with disabilities. The report was produced in partnership with Disabled Peoples International and included country reports on Cambodia, China, India, Japan, the Philippines, Thailand and Vietnam.  
Disability and Early Tsunami Relief Efforts in India, Indonesia and Thailand

**Links**  
Displaying 2 links See All

Post a link:  Post

**DIY for PhD: Do It Yourself for People with Disabilities | ETech 2008 - O'Reilly Conferences, March**  
Source: www.oreilly.com  
Wheelchairs aren't any more complicated than bicycles, but they cost a ridiculous amount of money. They shouldn't. Neither should other simple accessibility and mobility equipment. You can't start up all day at your desk, but you don't need a doctor to prescribe you a \$6000 office chair ...  
( ) Liz Henry's Presentation from the 2008 O'Reilly Media ETech Conference (see pp. 31 and 32 for information on the CIR and the Plastic Soda Bottle Prostheses) ( )  
Posted by You

**International Disability Rights Monitor**  
Source: idrm.org  
The International Disability Rights Monitor (IDRM) is an international grass-roots research project designed to document and assess the status of people living with disabilities worldwide. It represents ...  
Posted by You

**Video**  
Displaying 3 videos Add Videos See All

Mary Keogh Discusses the IDRM Project 9:40 Added about 2 weeks ago  
Edit Video | 1 Comment

William Kennedy Smith On the Rights of People with Disabilities 1:08 Added about 2 weeks ago  
Edit Video

**Applications** Online Friends (1)



## Appendix B Continued

iCons in Medicine (left) and IDRM (right) Pages Created on Facebook

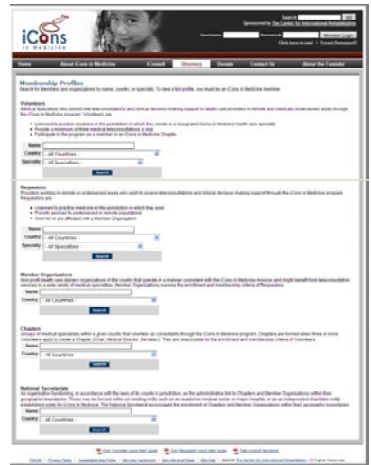
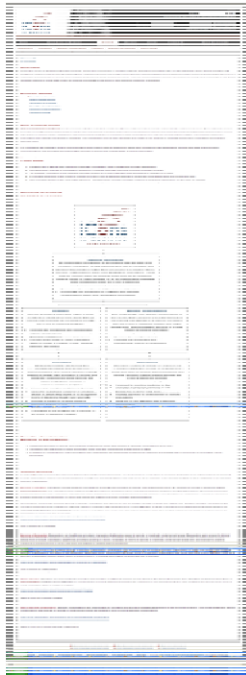


iCons in Medicine (left) and IDRM (right) Channels Created on YouTube



## Appendix C

## New look of the HOME page



## Appendix D



*iConsult is a program of iCons in Medicine that uses the Internet to connect healthcare providers in remote or medically underserved areas (Requestors) with a network of committed specialty physicians (Volunteers) who volunteer their expertise to provide clinical support. This program expands treatment options for patients who otherwise would not have access to specialty care.*

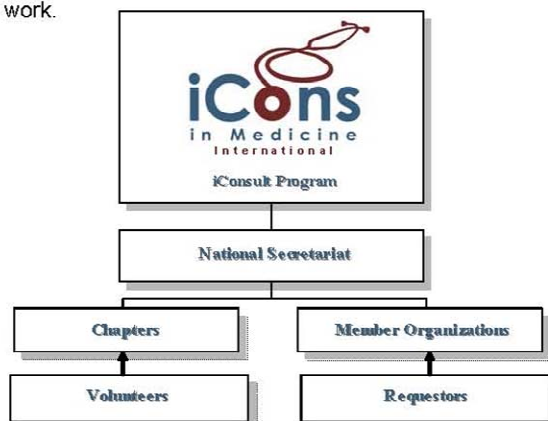
### NATIONAL SECRETARIATS

National Secretariats provide oversight to Chapters and Member Organizations within a specific geographic area, usually a country. A National Secretariat may be formed either within an existing entity, such as an academic medical center or major hospital, or as an independent charitable entity established solely for iConsult.

The primary responsibilities of a National Secretariat are to:

- Identify, enroll, and oversee “Member Organizations”- groups of healthcare providers working for non-profit institutions in medically underserved areas who wish to receive teleconsultation services through iConsult
- Identify, enroll, and oversee “Chapters”- groups of medical specialists who volunteer as consultants through the iConsult program
- Serve as a link to international iConsult organizations
- Coordinate iCons in Medicine national activities and participate in regional and international meetings

National Secretariats are recruited through a Request for Applications (RFA) process. They are licensed by iCons in Medicine International and may raise money and receive grants for their work.



To learn more about iConsult or to join,  
visit [www.iconsinmed.org](http://www.iconsinmed.org)





iConsult is a program of iCons in Medicine that uses the Internet to connect healthcare providers in remote or medically underserved areas (Requestors) with a network of committed specialty physicians (Volunteers) who volunteer their expertise to provide clinical support. This program expands treatment options for patients who otherwise would not have access to specialty care.

### PROVIDING TELECONSULTATIONS – VOLUNTEERS

Volunteers are physicians who provide free teleconsultations and clinical decision-making support to healthcare providers in remote or medically underserved areas. The responsibilities of the Volunteer are as follows:

- Provide a minimum of three medical teleconsultations per year to healthcare providers in remote or underserved areas using the iConsult features of the iCons in Medicine website.
- Communicate peer-to-peer as a source of knowledge for the requesting healthcare provider (no doctor-patient relationship is established).
- Maintain a valid license to practice medicine in a recognized iConsult healthcare specialty:

Allergy and Immunology	Internal Medicine: Hematology	Otolaryngology
Anesthesiology	Internal Medicine: Infectious Disease	Pathology
Colon and Rectal Surgery	Internal Medicine: Nephrology	Pediatrics
Dermatology	Internal Medicine: Oncology	Physical Medicine and Rehabilitation
Emergency Medicine	Internal Medicine: Pulmonology	Plastic Surgery
Family Medicine	Internal Medicine: Rheumatology	Preventative Medicine
Internal Medicine: General	Medical Genetics	Psychiatry and Neurology
Internal Medicine: Adolescent Medicine	Neurological Surgery	Radiology
Internal Medicine: Cardiology	Nuclear Medicine	Surgery
Internal Medicine: Endocrinology	Obstetrics and Gynecology	Thoracic Surgery
Internal Medicine: Gastroenterology	Ophthalmology	Urology
Internal Medicine: Geriatrics	Orthopaedic Surgery	

### GROUPS OF VOLUNTEERS - CHAPTERS

Chapters are responsible for recruiting and enrolling qualified physicians as Volunteers in the iConsult program.

All Volunteers enroll in the program through a Chapter. iConsult Volunteers may choose to join an existing Chapter or begin one of their own. Volunteers generally enroll in a Chapter with which they have a prior affiliation, such as a Chapter based at their place of employment. New Chapters are formed when three or more Volunteers (Chair, Medical Director, and Secretary) apply to create a Chapter.

(See reverse side for technical requirements, tools and features)

To learn more about iConsult or to join, visit  
[www.iconsinmed.org](http://www.iconsinmed.org)

### TECHNICAL REQUIREMENTS FOR VOLUNTEERING

In order to participate in iConsult, Volunteers should have the following:

- PC with 32 bit Microsoft Windows and 5 megabytes of free hard drive space
- Internet connection with Microsoft Internet Explorer version 5, 6, or 7

### TOOLS AND FEATURES FOR VOLUNTEERS

Once enrolled in a Chapter, Volunteers use the iCons in Medicine website to provide consultations. Features include:

- E-mail notification of new cases
- Personal homepage from which Volunteers can manage and respond to cases, read current news, and view their contacts
- Searchable member directory that allows Volunteers to find additional information about requesting healthcare professionals and other Volunteers
- "My Information" pages for managing personal profiles and preferences
- Forums, listservs, messaging, and chat rooms to allow participating members to network and exchange information
- User manuals and instructions for technical support

To learn more about iCons in Medicine or to join  
visit [www.iconsinmed.org](http://www.iconsinmed.org)



A Global Telehealth and Humanitarian Medicine Volunteer Alliance

[www.iconsinmed.org](http://www.iconsinmed.org)

### "iConsult"

*iConsult is a program of iCons in Medicine that uses the Internet to connect healthcare providers in remote or medically underserved areas (Requestors) with a network of committed specialty physicians (Volunteers) who provide clinical support. This program expands treatment options for patients who otherwise would not have access to specialty care.*

### REQUESTING TELECONSULTATIONS - REQUESTORS

Requestors are healthcare professionals managing challenging cases in remote or medically underserved areas. Requestors gain access to clinical advice from iConsult Volunteers. Healthcare providers working in non-profit clinics, hospitals, or NGOs in remote or medically underserved areas who are licensed to practice medicine in the jurisdiction in which they work are eligible to request teleconsultations through iConsult.

### HOW IT WORKS

The medical collaboration is made possible by pairing specially designed computer software with a social networking website. The service is free and allows healthcare providers to access a network of specialty physicians from around the world.

Requestors use the iConsult desktop computer software to complete a consultation form which includes a patient history, all relevant clinical details of the case, and the specialty area in which advice is sought. The software saves the information until an Internet connection is available. Once connectivity is established, the iConsult computer program routes the case to all Volunteers in the specialty area selected by the Requestor. Once a Volunteer accepts the case, the Requestor and Volunteer are able to engage in a one-to-one dialogue on the particulars of the case.

### GROUPS OF REQUESTORS - MEMBER ORGANIZATIONS

Member Organizations are responsible for recruiting and enrolling qualified healthcare providers as Requestors in the iConsult program. Non-profit organizations such as clinics, NGOs, and ministries of health that deliver health services in remote or medically underserved areas and that operate in a manner that is consistent with the iCons in Medicine mission are eligible to form iConsult Member Organizations.

All Requestors enroll in the iConsult program through a Member Organization. Requestors may choose to join an existing Member Organization or begin one of their own. In general, Requestors enroll in a Member Organization with which they have a prior affiliation, such as a Member Organization based at their place of employment.

**(See reverse side for technical requirements, tools, and features)**

To learn more about iConsult or to join,  
visit [www.iconsinmed.org](http://www.iconsinmed.org)

### TECHNICAL REQUIREMENTS FOR REQUESTING

In order to participate in iConsult, Requestors should have the following:

- PC with 32 bit Microsoft Windows and 5 megabytes of free hard drive space
- Internet connection with Microsoft Internet Explorer version 5, 6, or 7

### TOOLS AND FEATURES FOR REQUESTORS

Features of the iConsult computer program include:

- Small file size to enable rapid download
- Easy to install and use
- Compatible with limited or unreliable internet connectivity
- Secure login
- Built-in consultation form
- Imaging feature allows Requestors to upload digital images, such as X-rays, and add notes to the images for the Volunteer to view
- Ability to attach and send documents
- Encryption and secure socket layer (SSL) connections to enable continuous, secure two-way communication



Requestors also have access to the iCons in Medicine website, which includes:

- Searchable member directories that allow Requestors to find additional information about iConsult Volunteers or other Requestors
- "My Information" pages for managing profiles and preferences
- Forums, listservs, messaging, and chat rooms allow participating members to network and exchange information
- User manuals and instructions for technical support

To learn more about iConsult or to join,  
visit [www.iconsinmed.org](http://www.iconsinmed.org)



## Appendix G



Search    
Sponsored by [The Center for International Rehabilitation](#)

Username:  Password:    
[Click here to join!](#) | [Forgot Password?](#)

[Home](#) | [About iCons in Medicine](#) | [iConsult](#) | [Directory](#) | [Donate](#) | [Contact Us](#) | [About the Founder](#)

[Events](#) | [Press](#) | [iConsult Teleconsultation Advisory Board](#) | [Donors and Sponsors](#) | [Employment Opportunities](#)

### iConsult - Become a National Secretariat

National Secretariats oversee the enrollment of Chapters and Member Organizations within their geographic boundaries.

Within an existing establishment such as an academic medical center, major hospital, Non-governmental organization (NGO) or a non-profit organization they function as an independent charitable entity, in accordance with the laws of its country's jurisdiction. They may also be that of an independent charitable entity, established and operated as a separate and identifiable non-profit corporation or association, or other legally independent non-profit entity, which is managed and operated by a Board of Directors.

National Secretariats also coordinate iCons in Medicine national activities and participate in regional and international meetings. National Secretariats are recruited through a Request for Applications (RFA) process. They are licensed through iCons in Medicine International and may directly raise money and receive grants for their work on the program.

At this time, iCons in Medicine is requesting applications from outstanding national health care organizations in select countries for designation as National Organizations.

Select each of the following regional drop down menus to view the countries available for National Secretariat application:

Africa

Europe

Middle East / North Africa

Central & South Asia


Latin America


North America / Caribbean


East Asia / Pacific

[RFA Directions and process](#)

[National Secretariat Application](#)

 [iCon Volunteer quick start guide](#)

 [iCon Requestor quick start guide](#)

 [Tele-consult handbook](#)

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## Appendix G Continued



### REQUEST FOR APPLICATIONS FOR ICONS IN MEDICINE NETWORK NATIONAL SECRETARIATS

#### Application Submission Deadlines:

- July 31, 2008
- October 31, 2008
- January 31, 2009
- April 30, 2009

#### Issued by: iCons in Medicine International / Center for International Rehabilitation

211 East Ontario  
Suite 300  
Chicago IL, 60611  
www.iconsinmed.org  
312.280.4970

1

#### A. SUBMISSION PROCESS

1. All submissions in response to this Request for Applications (RFA) must be done via the iCons in Medicine website at: <http://www.iconsinmed.org> (Hard copy submissions will not be accepted.)
2. In order to be considered by the Selection Committee, applications must be completed in full.
3. An application may be submitted at any time and will be reviewed on a quarterly basis as outlined below.
4. Questions on the application process should be directed to [info@iconsinmed.org](mailto:info@iconsinmed.org)

#### B. DEADLINE FOR SUBMISSION

1. Deadlines for submissions are set on a quarterly basis:
  - First Quarter: July 31, 2008
  - Second Quarter: October 31, 2008
  - Third Quarter: January 31, 2009
  - Fourth Quarter: April 30, 2009

#### C. APPLICATION

1. In what country is this organization located?  
\_\_\_\_\_

2. Is the organization a new entity or part of an existing entity?

☐ A new entity established solely for the iCons in Medicine Program  
The name of the proposed entity is:  
\_\_\_\_\_

☐ The iCons in Medicine Program will be part of an existing organization  
Name of existing organization:  
\_\_\_\_\_

This organization has the ability to function as a National Secretariat within this establishment as an independent charitable entity, in accordance with the laws of the country's jurisdiction  
☐ Yes ☐ No

2

## Appendix G Continued

3. What type of facility is this organization?

☐ Academic Medical Center

☐ Major Hospital

• Number of beds \_\_\_\_\_

☐ Non-Governmental Organization (NGO)

☐ Non-profit Organization

☐ Other \_\_\_\_\_

4. How long has this organization been in operation?

☐ Less than a year

☐ 1-5 years

☐ 6-10 years

☐ 10+ years

5. What is the mission statement of this organization?

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6. The organization has access to the following number of personal computers:

☐ 1-5

☐ 6-10

☐ 11-15

☐ 16-20

☐ 21-25

☐ 25+

7. Does the organization have Internet connectivity? ☐ Yes ☐ No

Type of connectivity:

☐ 56 kbps dial-up modems

☐ 128 kbps ISDN lines

☐ Other \_\_\_\_\_

Hours a day of connectivity/electricity:

☐ 1-5 hours

☐ 6-10 hours

☐ 11-15 hours

☐ 24 hours

3

8. Please check all health care specialties in which the organization is affiliated:

☐ Allergy and Immunology

☐ Nuclear Medicine

☐ Preventative Medicine

☐ Anesthesiology

☐ Obstetrics and

Gynecology

☐ Psychiatry and Neurology

☐ Colon and Rectal Surgery

☐ Ophthalmology

☐ Radiology Dermatology

☐ Orthopaedic Surgery

☐ Emergency Medicine

☐ Otolaryngology

☐ Thoracic Surgery

☐ Family Medicine

☐ Pathology

☐ Urology

☐ Internal Medicine

☐ Pediatrics

☐ Medical Genetics

☐ Physical Medicine and

Rehabilitation

☐ Neurological Surgery

☐ Plastic Surgery

9. Total number of employees in the organization:

☐ 1-5

☐ 6-10

☐ 11-20

☐ 21-30

☐ 31-40

☐ 41-50

☐ 51-60

☐ 61-70

☐ 71-80

☐ 81-90

☐ 91-100

☐ 100+

10. Number of licensed physicians working for or associated with the organization:

☐ 1-5

☐ 6-10

☐ 11-15

☐ 16-20

☐ 21-25

☐ 25+

11. Please provide the proposed names for the Executive Committee (or Board of Directors):

**Chair**

Name \_\_\_\_\_

Title \_\_\_\_\_

**Executive Director**

Name \_\_\_\_\_

Title \_\_\_\_\_

**Medical Director**

Name \_\_\_\_\_

Title \_\_\_\_\_

Specialty area \_\_\_\_\_

**General Member**

Name \_\_\_\_\_

Title \_\_\_\_\_

4

## Appendix G Continued

**General Member**  
Name \_\_\_\_\_  
Title \_\_\_\_\_

12. Are all members listed above are proficient in English (both reading and writing)?  
☐ Yes ☐ No

13. Please identify which of the above individuals will become a Volunteer (at least one is required):  
Name \_\_\_\_\_  
Specialty area \_\_\_\_\_

14. Does the organization have the ability to recruit and support chapters and member organizations in the proposed geographical area of service?  
☐ Yes ☐ No  
If yes, please provide an example of how such entities might be recruited.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

15. Does the organization have reliable financial resources as a non-profit?  
[Select here to see example](#)  
☐ Yes ☐ No  
If yes, please provide an example:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

16. Will the organization be able to commit to at least one year as a National Secretariat?  
☐ Yes ☐ No

17. If selected as a National Secretariat, will the organization enter into an affiliation and license agreement with iCons in Medicine?  
[Select here to see example](#)  
☐ Yes ☐ No

18. Please feel free to add any additional information that might be relevant to becoming a National Secretariat:  
\_\_\_\_\_  
\_\_\_\_\_

5

[illegible]

### Telemedicine Support for the Iraqi Health Sector: *Building Bridges Through Humanitarian Relief*

Friday May 23 • 8am – 5:00 pm • Chicago Illinois

#### Program Description/ Roles and Responsibilities

##### The Goal

The goal of the meeting is to prepare for the Iraqi Minister of Health, and the international community, a viable set of options as to how telemedicine, communications technologies and an international workforce might best be used to strengthen the health sector in Iraq. These options will be developed in parallel workshops focusing on developing recommendations in 5 key areas. Each workshop will be lead by a Rapporteur who will compile the participants' ideas and conclusions into a final report for distribution.

##### Tracks

Each workshop will focus on one key area:

1. Public health
2. Healthcare Delivery
3. Refugee Assistance
4. Medical education and training
5. War Wounded

##### Rapporteur

There will be one Rapporteur per workshop. This person will facilitate the deliberations of the workshop, produce a document based on the conclusions determined and play a role in the reporting of these findings to Congress, the media and others of interest. The Rapporteur will identify the participants of the workshop in which he/she leads.

##### Secretary

There will be one Secretary per workshop. He/she will be responsible for the scribing of discussions during the session and then coordinating with the Rapporteur to produce a final summation document.

##### Scope of Work

Each session will address the following strategies in regards to the track and potential approaches for use within the ICT infrastructure in Iraq.

1. Store and forward technology
2. High-bandwidth synchronous connectivity
3. Distributed learning
4. Cellular technology
5. Web based approaches

##### Workshop Methodology

Each workshop will encompass activities including: identifying strategies, prioritizing strategies, developing strategies. The flow of the workshop will be:

1. Identifying Strategies: Using flip charts, the group will collectively document any and all strategies relevant to each area of focus.
2. Prioritizing Strategies: After all strategies have been documented, groups will prioritize strategies by having each participant place a sticker next to the five strategies they feel have the best chance of success. Each participant will have only five stickers and the strategies will be rank ordered by the number of stickers they accumulate during the course of this exercise.
3. Developing Strategies: The group will further develop each of the selected strategies focusing on best practices, appropriate use of resources and effective partnership.

##### Documentation

The Rapporteur and Secretary will compile the output to present during the wrap-up at the closing plenary session. A final report will be prepared for distribution.

## Telemedicine Support for the Iraq Health Sector: Building Bridges Through Humanitarian Relief

*A one-day exchange of ideas as to how telemedicine might be used  
to strengthen the health sector in Iraq*

*Friday May 23, 2008 • 8:00 am – 5:00 pm  
Northwestern University • Chicago, Illinois*

8:00 am - 8:30 am

### Registration/breakfast

*(Atrium, Robert H. Lurie Medical Research Center 303 E. Superior)*

All participants of the workshops will need to check in at registration to receive their packet of information for the day.

8:30 am - 10:35 am  
*The plenary will begin  
promptly at 8:30 am*

### Plenary Session: Welcome/Opening remarks

*(Baldwin Auditorium, Robert H. Lurie Medical Research Center)*

#### Key Note Speaker

**The Honorable Salih Mahdi Motlab Al-Hasnawi, MD**

- Current Overview the Iraqi Health Sector

#### Speakers

**Dan Sudnick, PhD** Chief Financial Officer

Tragedy Assistance Program for Survivors, Inc.

- Iraq's Current Telecommunications Infrastructure

**Colonel Ron Poropatich**, Deputy Director, Telemedicine Advanced Technology Research Center

- Store and Forward Tele-Consultation, A Practical Approach to Telemedicine: The U.S. Army Experience

**The National Arab American Medical Association and the Center for International Rehabilitation**

- iCons in Medicine- A Volunteer-Driven, Next Generation Knowledge Network for Iraq and Beyond

10:35 am - 10:45 am

Working groups gather in the atrium according to designated tracks.

10:45 am

Secretaries lead their respective group to the appropriate meeting room (four groups are across the street from the plenary session in the same building, one of the groups will be in another building).

11:00 am - 3:30 pm  
(Working lunch  
12:30 pm - 1:00 pm)

### Working Groups of Experts

*(McGaw Pavilion 240 E. Huron St. and Rubloff Bldg. 375 Chicago Ave.)*

Within each group's area of focus (public health, health care delivery, medical education and training, refugee assistance and war wounded) compile a viable set of options as to how telemedicine, communications technologies and an international workforce might best be used to strengthen the health sector in Iraq.

3:30 pm - 5:00 pm

### Wrap up session

*(Williams Auditorium, McGaw Pavilion, 240 E. Huron St.)*

#### Speakers

Donald "Pat" Patierno (3:30- 3:45)

- International Trust Fund

#### Workshops

Public Health (3:45-4:00)

Healthcare Delivery (4:00-4:15)

Medical Education and Training (4:15-4:30)

Refugee Assistance (4:30-4:45)

War Wounded (4:45-5:00)

### Meeting Sponsors

#### **Center for International Rehabilitation**

William Kennedy Smith, MD  
*President*  
[drsmith@cirnetwork.org](mailto:drsmith@cirnetwork.org)

The Center for International Rehabilitation (CIR) is a Chicago-based, not-for-profit organization that develops research, education and advocacy programs to improve the lives of people with disabilities internationally. Founded in 1996, the CIR operates in collaboration with the renowned Rehabilitation Institute of Chicago and Northwestern University. Through innovative engineering projects, capacity building education programs, interactive online tools, and disability rights advocacy, the CIR reaches out to individuals and communities across the globe.

#### **Chicago Medical Society**

Saroja Bharati, MD  
*President*  
[SarojaBharati@thic.com](mailto:SarojaBharati@thic.com)

Chicago Medical Society (CMS) was founded in 1850 and just celebrated its 150th anniversary. The Society cultivates the science and art of medicine, the interchange of professional experience, and the encouragement of professional zeal among its members. Membership is composed of nearly 7,000 professionals in specialties across Cook County in Chicago, Illinois. Membership is open to all medical students, residents, physicians active in practice, academicians and retired physicians.

#### **Iraqi Medical Science Association**

Riad Almudallal, MD  
*President*  
[riadalmudallal@yahoo.com](mailto:riadalmudallal@yahoo.com)

The Iraqi Medical Sciences Association (IMSA) is a non-profit organization of medical doctors, dentists, pharmacists, scientists, and other health science professionals. Its broad mission is to promote scientific, cultural, and social exchanges for the betterment of its members and their communities. Founded in 1998 as an association for the worldwide diaspora of Iraqi medical alumni, IMSA has evolved into a vibrant and dynamic community of health science professionals and their families—and an organization which has consistently sought to promote harmony and unity in the context of scientific and cultural enrichment.

#### **National Arab American Medical Association**

Mouhanad Hammami, MD  
*Executive Director*  
[mhammami@naama.com](mailto:mhammami@naama.com)

National Arab American Medical Association (NAAMA) is a nonprofit, nonpolitical, educational and charitable organization of medical professionals of Arab descent. NAAMA was incorporated in California in 1975 and became a national organization in 1980. Twenty-nine chapters of NAAMA have been established in the United States and Canada. The objectives of NAAMA encompass a wide range of professional, educational, charitable, humanitarian and cultural activities.



## Organizing Committee

### Honorary Chairman

Senator Richard J. Durbin

### Honorary Chairman

Congressman Raymond H. LaHood

Dale C. Alverson, MD  
*Professor of Pediatrics and  
Regents' Professor  
Medical Director, Center for  
Telehealth and  
Cybermedicine Research*

Riad Almudallal, MD  
*President  
Iraqi Medical Sciences  
Association*

Richard S. Bakalar, MD  
*Chief Medical Officer  
IBM Global Healthcare.  
Provider Segment*

Charles Bennett, MD  
*Professor, Division of  
Hematology / Oncology  
Northwestern University*

Saroja Bharati, MD  
*President  
Chicago Medical Society*

Elizabeth Calhoun, PhD  
*Assoc. Professor, Dept. of  
Health Policy and  
Administration  
University of Illinois at  
Chicago School of Public  
Health*

Conrad Clyburn, MS  
*Assoc. Director for Emerging  
Technology  
ISIS Center, Georgetown  
University*

Charles R. Doarn, MBA  
*Executive Director  
University of Cincinnati's Center for  
Surgical Innovation*

Shakir Jawad, MD  
*Assistant Professor, MEM  
Uniformed Services University of the  
Health Sciences., F. Edward Hebert  
School of Medicine*

Joseph C. Kvedar, MD  
*Director, Center for Connected  
Health  
Partners HealthCare System, Inc.  
Associate Professor of Dermatology  
Harvard Medical School*

Rifat Latifi, MD, FACS  
*Prof. of Clinical Surgery  
The University of Arizona*

Lynn Lawry, MD, MSPH, MSc  
*Instructor in Medicine, Harvard  
Medical School and  
Faculty member, Brigham and  
Women's Hospital, Division of  
Women's Health*

Mouhanad Hammami, MD  
*Executive Director  
National Arab American Medical  
Association*

Ronald Merrell, MD, FACS  
*Professor of surgery  
Dir. of the Medical Informatics and  
Technology Applications Consortium  
Virginia Commonwealth University*

Arnauld Nicogossian, MD  
*Head of the Office of  
International Medical Policy at  
the School of Public Policy  
George Mason University*

Laurence Ronan, MD  
*Senior Adviser  
Center For the Integration of  
Medicine and Innovative  
Technology (CIMIT)  
Harvard Medical School*

Jay Sanders, MD  
*President and CEO  
The Global Telemedicine Group*

William Kennedy Smith, MD  
*President  
Center for International  
Rehabilitation*

Max E. Stachura, MD  
*Director of the Center for  
Telehealth  
Medical College of Georgia*

Mark VanderWerf  
*President  
AMD Telemedicine*

Abdulrahman Yassin, MD  
*Consultant  
Center for International  
Rehabilitation*

### Organizing Committee Biographies

#### **Riad Almudallal, MD**

*President*

*Iraqi Medical Sciences Association*

Dr. Almudallal is the president of the Iraqi Medical Sciences Association. He is a U.S.-based Iraqi physician with a practice specialization in Gastroenterology and Hepatology. A graduate of the Medical College of Baghdad University, he did postgraduate studies at the Glasgow Medical College, Scotland, Mount Sinai Medical Center and St. Luke's Hospital in Cleveland, Ohio, and completed a Fellowship in Gastroenterology at Case Western Reserve University in Cleveland. Dr. Almudallal is certified by the American Board of Gastroenterology and the American Board of Internal Medicine. He is a member of numerous professional associations including the American College of Gastroenterology, American College of Physicians, American Medical Association and the Royal College of Pathologists. Dr. Almudallal's research activities involve issues of gastrointestinal hemorrhage and lymphomas.

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#### **Dale C. Alverson, MD**

*Professor of Pediatrics and Regents' Professor*

*Medical Director, Center for Telehealth and Cybermedicine Research*

Dr. Alverson is a Professor of Pediatrics and Regents' Professor on faculty at the University of New Mexico and the Medical Director of the Center for Telehealth and Cybermedicine Research. In that role, he has been involved in the planning, implementation, research and evaluation of Telemedicine systems for New Mexico primarily serving its rural communities. He is a founder of the New Mexico Telehealth Alliance and has been appointed by the Governor as a commissioner on the New Mexico Telehealth Commission. He is on the Boards of the American Telemedicine Association (ATA) and the Center for Telehealth and e-Health Law (CTeL). He is also a member of the Four Corners Telehealth Consortium, and has participated in international Telehealth projects, particularly with Latin America.

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#### **Saroja Bharati, MD**

*President*

*Chicago Medical Society*

Dr. Bharati is the president of the Chicago Medical Society and the director of the Maurice Lev Congenital Heart and Conduction System Center, part of the Heart Institute for Children, Advocate Hope Children's Hospital. She is also professor of pathology at Rush University Medical Center, clinical professor of pathology at Rosalind Franklin University, and visiting professor of pathology at the University of Illinois College of



Medicine. She is the only cardiac pathologist to teach at all six medical schools in the Chicago area. Dr. Bharati has published extensively, including a recent two-volume book titled *Pathology of Congenital Heart Disease: A Personal Experience with More than 6,300 Congenitally Malformed Hearts*. In 1999, *Today's Chicago Woman* magazine honored Dr. Bharati as one of 100 women making a difference in Chicago.

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**Richard Bakalar, MD**

*Chief Medical Officer*

*IBM Global Healthcare, Provider Segment*

Dr. Bakalar, who previously served as President of the ATA, currently serves as the Chief Medical Officer on IBM's Global Healthcare and Life Sciences Industry team. He is the senior clinical advisor to the U.S. and Canadian Business Consulting Services Healthcare teams which have hosted informational workshops and health care seminars. Dr. Bakalar joined IBM Healthcare and Life Sciences team after 26 years service in the U.S. Navy Medical Corps. He has extensive experience in clinical medicine, diagnostic imaging, military medical flight operations, and applied information technology. He is board certified in both Internal and Nuclear Medicine. Dr. Bakalar served as the Executive Assistant to Navy Surgeon General for Global Telemedicine initiatives.

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**Charles Bennett, MD**

*Professor, Division of Hematology / Oncology*

*Northwestern University*

Dr. Bennett is Associate Director of the Midwest Center for Health Services & Policy Research at the Jesse Brown VA Medical Center-Lakeside CBOC and Co-Director for the Cancer Control Program of the Robert H. Lurie Comprehensive Cancer Center of Northwestern University, as well as Professor of Medicine at the Northwestern University Feinberg School of Medicine, Division of Hematology/Oncology. He has board certification in internal medicine with a medical oncology subspecialty. Dr. Bennett is an active member on practice and outcomes assessment committees for the American Society of Hematology, the Department of Veterans Affairs (VA), the National Cancer Center Network, the American Society of Clinical Oncology, and the Eastern Cooperative Oncology Group. He is also an editor for the *Journal of Acquired Immunodeficiency Syndrome* and a reviewer for several hematology and oncology journals.

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**Elizabeth Calhoun, PhD**

*Assoc. Professor, Dept. of Health Policy and Administration*

*University of Illinois at Chicago School of Public Health*

Dr. Calhoun is an associate professor and senior research scientist in the division of health policy and administration in the school of public health at the University of Illinois

at Chicago. She is an experienced health services researcher with expertise in health disparities and underserved populations. Additional areas of expertise include economic and organizational analyses as well as program evaluation.

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**Conrad Clyburn, MS**

*Associate Director for Emerging Technology  
ISIS Center, Georgetown University*

Mr. Clyburn is the Associate Director for Emerging Technology, ISIS Center at Georgetown University. From 1997 to 2005, he served as Director of Program Integration and Planning for the U.S. Army Medical Research and Materiel Command, Telemedicine and Advanced Technology Research Center (TATRC) in Fort Detrick, Maryland. In that capacity, Mr. Clyburn was responsible for life cycle management of more than 500 medical research and development programs. His responsibilities included execution of academic, government and industry programs in telemedicine, medical informatics, advanced surgical technology and imaging, bioinformatics, medical modeling and simulation, as well as biosurveillance, robotics, biomaterials, tissue engineering and nanotechnology. During his tenure, TATRC-funded programs spearheaded the development of numerous medical technologies that are now being used by U.S. troops and other federal agencies.

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**Charles R. Doarn, MBA**

*Executive Director  
University of Cincinnati's Center for Surgical Innovation*

Mr. Doarn serves as the Executive Director of the University of Cincinnati's Center for Surgical Innovation, where he is also a Research Associate Professor of Surgery and Biomedical Engineering. Prior to joining the faculty in Cincinnati, Mr. Doarn served as the Executive Director and co-principal investigator for NASA's Research Partnership Center for Medical Informatics and Technology Applications (MITAC) at Virginia Commonwealth University, where he authorized NASA's strategic plan for Telemedicine. Mr. Doarn served on the Board of Directors for the ATA as well as Secretary, Treasurer, and chair of the International Special Interest Group. Mr. Doarn also serves as an Editor-in-Chief of the Telemedicine and E-Health Journal.

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**Mouhanad Hammami, MD**

*Executive Director  
National Arab American Medical Association*

Dr. Hammami is the president of the Michigan chapter of the National Arab American Medical Association (NAAMA). He is a graduate of Aleppo University School of Medicine and is currently a faculty member of Wayne State University School of Medicine in the Department of Pediatrics. He is a Professor of Microbiology at Oakland

Community College as well as a Research Associate at the Detroit Medical Center researching nutrition and growth in newborns. Dr. Hammami has been involved in different clinical studies ranging from infant formula evaluation to new childhood vaccination trials. He was involved in the NIH funded PACTG clinical trial on "body composition in infants born to HIV-positive mothers" between 1997 and 2003 as well as many other studies, with the most recent conducted in 2004 in collaboration with ACCESS Health and Research Center which studied the growth of Palestinian children living in refugee camps in Lebanon. Dr. Hammami is a member of a number of several professional and honor societies and has had many publications in different medical journals.

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**Shakir Jawad, MD**

*Assistant Professor, MEM*

*Uniformed Services University of the Health Sciences.*

*F. Edward Hebert School of Medicine*

Dr. Jawad is currently assigned as an Assistant Professor in the Department of Military and Emergency Medicine at the Uniformed Services University of the Health Sciences. He was a Brigadier General in the Iraqi Armed Forces and oversaw CME/ CPD programs and innovative development of an e-library providing the most current information possible under embargo conditions. After the fall of Saddam's regime he joined the Iraqi Ministry of Health in support of the Coalition Provisional Authority Health Team helping to re-establish the Iraqi health care system. In May 2003 he was appointed as the Director General of the Department of Military Medical Affairs at the Iraqi Ministry of Health (The Iraqi Surgeon General) then promoted to the Director General of Medical Operations (Under Secretary of Health). In 2004 he modernized the rudimentary operations center at the Ministry of Health providing video conferencing and telemedicine capabilities to 13 teaching hospitals in Baghdad and to 6 other medical sites. He has extensive knowledge and clinical expertise in bone lengthening procedures and operative treatment of wide bone gaps. His current areas of interest and endeavor include international health, post-conflict reconstruction of healthcare systems, government health policy, and health education.

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**Joseph C. Kvedar, MD**

*Director, Center for Connected Health*

*Partners HealthCare System, Inc.*

*Associate Professor of Dermatology*

*Harvard Medical School*

Dr. Kvedar is Founder and Director of the Center for Connected Health, a division of Partners Healthcare that is applying communications technology and online resources to improve access and delivery of quality patient care. Dr. Kvedar is internationally recognized for his leadership in the field of connected health. He is a past President and board member of the American Telemedicine Association (ATA) and co-editor of *Home*

*Telehealth: Connecting Care within the Community*, the first book to report on the applications of technology to deliver quality healthcare in the home. Dr. Kvedar is also a board-certified dermatologist and Vice-Chair of Dermatology at Harvard Medical School.

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**Rifat Latifi, MD, FACS**

*Professor of Clinical Surgery  
The University of Arizona*

Dr. Latifi is a Professor of Clinical Surgery at the University of Arizona, Vice Chairman of the Department of Surgery for International Relationship, and Director of Southern Arizona Telemedicine and Telepresence Program (SATT) at the University Medical Center, Tucson, Arizona. In addition to his role as director, he developed the SATT Program, which provides a live consultation link—including state-of-the-art videoconferencing, telemetry, digital X-rays and ultrasound—between the trauma doctors at UMC and rural emergency room doctors and nurses in the southern section of the state to assist in trauma care of injured and critically ill patients. He is also the Associate Director of Arizona Telemedicine Program where he leads Telesurgery and International Affairs for this program. Dr. Latifi is a graduate of Medical Faculty in Prishtina, Kosova. He has a president of International Virtual e-Hospital Foundation.

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**Lynn Lawry, MD, MSPH, MSc**

*Harvard Medical School and Brigham and  
Women's Hospital, Division of Women's Health*

Dr. Lawry, of Harvard Medical School, Division of Women's Health at Brigham and Women's Hospital and the Bloomberg School of Public Health, Johns Hopkins University, has devoted her career to humanitarian aid, international human rights violations and human rights training, much of it in war-torn areas in Africa, Asia and the Middle East. Dr. Lawry served with many humanitarian aid organizations including Physicians for Human Rights, in Kosovo, Pakistan, Afghanistan, Sierra Leone, Nigeria and Iraq and International Medical Corps in Darfur, South East Asia, and Katrina hit areas. Her focus has been conducting and using evidence-based research to advocate for changes in health and human rights inequalities. She is Director of Research and Education at the Center for Disaster and Humanitarian Assistance Medicine at the Uniformed Services University of the Health Sciences. She focuses on rights-based programming, or making sure that programming meets international standards of care and civil-military coordination.

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**Ronald Merrell, MD, FACS**

*Professor of surgery*

*Director of the Medical Informatics and Technology Applications Consortium  
Virginia Commonwealth University*

Dr Merrell is professor of surgery and director of the Medical Informatics and Technology Applications Consortium at Virginia Commonwealth University. He is an editor-in chief of *Telemedicine and e-Health* and author of some 300 publications in the field of medicine and technology. Dr Merrell trained in surgery and biological chemistry at Washington University in St Louis. Dr Merrell is an endocrine surgeon and has held the chair in surgery at Yale and at Virginia Commonwealth University. Dr Merrell has a long history as advisor and investigator for NASA and the Army. His research work has emphasized management of medical events at a distance including extreme environments.

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**Arnauld Nicogossian, MD**

*Head of the Office of International Medical Policy at the School of Public Policy  
George Mason University*

Dr. Nicogossian heads the Office of International Medical Policy at the School of Public Policy at George Mason University in Fairfax, Va. He has been Senior Advisor to the NASA Administrator for agency-wide issues related to health care provisions and aerospace medicine and has held increasingly responsible positions in NASA research and development areas for more than 30 years. He was named Associate Administrator for Life and Microgravity Sciences and Applications in May 1996, and has contributed significantly to the NASA mission of ensuring crew health in human exploration missions. He served as the lead physician for NASA's first international human space flight mission, the Apollo-Soyuz Test Project.

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**Laurence Ronan, MD**

*Senior Adviser*

*Center For the Integration of Medicine and Innovative Technology (CIMIT)  
Harvard Medical School*

Dr. Ronan is a staff physician at Massachusetts General Hospital, and presently serves as the MGH Director of Primary Care Sports Medicine and Director of Team 4 Hospitalist Service. Dr. Ronan is also the Director of the MGH Thomas S. Durant Fellowship in Refugee Medicine and is on the Executive Committee of the Harvard Humanitarian Initiative. He has served in a number of disaster relief efforts including the Indonesian tsunami ('04) and Katrina ('05). He directs Helping Hands, a relief effort for Iraqi children wounded in the war and who require medical care in the United States. Dr. Ronan works with the Medical Alliance for Iraq, a physician organization dedicated to supporting Iraqi physicians in the reconstruction. He is involved in a number of

international projects that utilize telemedicine and serves as Senior Advisor to Partners Center for Medically Innovative Technology (CIMIT) and the MGH Global Health Center.

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**Jay Sanders, MD**

*President and CEO*

*The Global Telemedicine Group*

Dr. Sanders is President and CEO of The Global Telemedicine Group, Professor of Medicine at Johns Hopkins University School of Medicine (Adjunct), and a founding board member of the American Telemedicine Association—where he serves as President Emeritus. After Dr. Sanders earned his medical degree from Harvard Medical School Magna Cum Laude, his professional career has involved teaching, patient care and health care research, along with more than 30 years experience in the field of telemedicine. He has served as a medical consultant to NASA, the U.S. Army and the World Health Organization, and during the Clinton Administration he directed the U.S. telemedicine initiatives to the G-8 nations.

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**William Kennedy Smith, MD**

*President*

*Center for International Rehabilitation*

Dr. Smith is President of the Center of International Rehabilitation (CIR) and founder of Physicians Against Land Mines. He is a board-certified physiatrist, trained prosthetist and Principal Investigator on the CIR's International Disability Educational Alliance grant from the U.S. Department of Defense. Dr. Smith serves as adjunct clinical instructor at Northwestern University Medical School. A past recipient of the Scholl Recognition Award for Rehabilitation Research, he is a past member of the United States Council on International Disabilities and a past Chair of the working group on post conflict development and disabilities for the National Council on Disabilities. His presentations on the health consequences of landmines and international rehabilitation issues have been featured at numerous international conferences, including those of the American Medical Association, Rotary International, and the United Nations Association of the United States of America. A graduate of Duke University, Dr. Smith completed medical school at Georgetown University and residency at Northwestern University and the Rehabilitation Institute of Chicago.

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**Max E. Stachura, MD**

*Director of the Center for Telehealth*

*Medical College of Georgia*

Dr. Stachura was Endocrinology Section Chief at the Medical College of Georgia, Augusta, from 1981 until he became Director of the Center for Telehealth and Georgia

Research Alliance Eminent Scholar in Telemedicine in 1996. He continues his endocrinology practice with a sub-specialty focus in neuroendocrinology. Under his direction the Georgia Statewide Telemedicine Program grew to deliver more than 2,000 specialty consultations per year. That statewide program has now been subsumed under the Georgia Technology Authority and WellPoint, Inc., allowing the Center and Dr. Stachura to focus on telehealth research, services development, and consultation activities. In 2000, he was appointed to the Board of Directors of the Alliance for Public Technology and served two terms as its president in 2005 and 2006.

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**Mark VanderWerf**

*President*

*AMD Telemedicine*

Mr. VanderWerf founded AMD Telemedicine, which has over 5,000 installations in over 275 telemedicine programs in 68 countries. He joined American Medical Development as a Vice President in 1991 where he was instrumental in changing the Company's focus from traditional medical products to telemedicine. In 1994 he became the President and changed the name to AMD Telemedicine. Prior to AMD, Mr. VanderWerf was a New Ventures Manager for Digital Equipment Corporation, also serving as an internal consultant and an international programs manager. Mr. VanderWerf is the 2006 recipient of the ATA Industry Council Leadership Award and the 2003 recipient of the New England Business and Technology Leadership award as among the top 10 technology executives in the region. He is a member of the Board of Directors of the American Telemedicine Association and a founding Board of Directors member of the International Society for Telemedicine and eHealth.

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**Abdulrahman Yassin, MD**

*Consultant*

*Center for International Rehabilitation*

Dr. Yassin works as a consultant to the Center for International Rehabilitation (CIR) serving as a liaison for the Middle East and in assisting the CIR with field projects in the region. Dr. Yassin's long work experience includes: Director of Handicapped Rehabilitation Center in Baghdad, Director of Rehabilitation Centers Department in Handicapped Welfare Council, and roles in the Department of Rehabilitation and Prevention of Disability in the Ministry of Health. He has also been a health care specialist in several medical and rehabilitation institutions and a medical consultant for various projects relating to managing disability projects. Dr. Yassin is a member of the Iraqi Medical Association as well as the Iraqi Rehabilitation and Welfare of Handicapped Society.

## The Workshops

### After the morning plenary (10:30 am – 11:00 am)

After the close of the morning plenary, participants of the working groups will gather in the atrium according to their designated track. Each individual group will walk together to their respective meeting rooms (four of the working groups are across the street from the plenary session in the same building, one of the groups will be in another building).

Directions for each location will be in a packet for each member of the group. The secretaries for each group will be in charge of leading their group to the proper room.

### Conducting of the workshops (11:00 am – 3:30 pm)

The group will offer ideas as to how telemedicine and communications technologies (i.e. store-and-forward technology, high-bandwidth synchronous connectivity, distributed learning, cellular technology, web-based approaches, etc) can be applied to the ICT infrastructure in Iraq within the track area. Once multiple ideas have been generated, the group will prioritize these strategies to determine the top five to ten. Finally, the group will develop these top five to ten strategies into potential programs or projects by focusing on best practices, appropriate use of resources and effective partnerships.

It is hoped that the results produced by the workshops will lead to the development of a trust fund under which these programs can be implemented.

To help facilitate this effort, each workshop will have:

- A Rapporteur to facilitate the deliberations of the workshop
- A group of experts in the area of focus
- A separate conference room with flip charts
- A secretary to record the ideas
- A block of time from 11:00 am to 3:30 pm

The 4 ½ hour workshop can be broken out into three separate components: Identifying Strategies, Prioritizing Strategies and Developing Strategies. Below is a suggested schedule for the workshop:

11:00 am – 11:10 am	Introductions and instructions
11:10 am- 12:30 pm	<u>Identifying Strategies</u> <ol style="list-style-type: none"> <li>1. Based on experiences, the participants verbalize their thoughts regarding relevant strategies on the area of focus.</li> <li>2. The Rapporteur will zone in on the ideas and encapsulate into a one sentence description.</li> <li>3. The secretary will list these strategies on the flip charts.</li> <li>4. As the ideas are written down, the flip chart pages will be posted.</li> </ol>
12:30 pm- 1:00 pm (Working lunch)	<u>Prioritizing Strategies</u> <ol style="list-style-type: none"> <li>1. Each member of the group will be given five - ten stickers.</li> <li>2. Each will place a sticker next to the five - ten strategies they feel have the best chance of success (a minimum of five, but as many as ten if really felt merited). The strategies will be ranked by the number of stickers they accumulate during the course of this exercise.</li> <li>3. Each strategy will be developed further throughout the workshop.</li> </ol>
1:00 pm- 3:30 pm (Break as needed)	<u>Developing Strategies</u> <ol style="list-style-type: none"> <li>1. Each of the five - ten strategies will be developed separately, one at a time.</li> <li>2. The group should approach each by focusing on best practices, appropriate use of resources and effective partnerships in order to outline potential programs or projects.</li> </ol> <p><i>Examples:</i></p> <ul style="list-style-type: none"> <li>* Provide refugees with a "smart card" that contains their health record.</li> <li>* Set up an international online training program out of Syria for degreed programs.</li> </ul>
3:30 pm	The plenary will reconvene in Williams Auditorium, McGaw Pavilion, where the Rapporteurs will present high level details of their group's consensus.



### **Workshop Participants**

#### **Public Health**

Location:

Rubloff Building 375 E. Chicago

Room 981

Rapporteur:

Eric Rasmussen, MD- InSTEDD

Secretary:

Athena Samaras

Participants:

1. Fadi Bashour – National Arab American Medical Association
2. Kenneth Busch—Chicago Medical Society
3. Elizabeth Calhoun-- Dept. of Health Policy and Administration University of Illinois at Chicago School of Public Health
4. Paul Heinzelmann-- Harvard Medical School
5. Charles Bennett MD-- Northwestern University
6. Eric Noji M.D-- Consultants in Global Health Security
7. Jonathan Linkous-- American Telemedicine Association
8. Arnauld Nicogossian-- Office of International Medical Policy at the School of Public Policy at George Mason University
9. Ed Menshah-- University of Illinois at Chicago
10. Benn Greenspan-- University of Illinois at Chicago

#### **War Wounded**

Location:

McGaw Pavilion 240 E. Huron

Room 403

Rapporteur:

Tammy Duckworth- Director Veterans Affairs State of Illinois

Secretary:

Hector Casanova

Participants:

1. Mike Corcoran-- Prosthetics contractor at Walter Reed
2. Gene Conley MD—Physician with ground experience in Iraq
3. Dan Sudnick-- Tragedy Assistance Program for Survivors, Inc.
4. Mike Quigley-- Consultant
5. Bjarni O. Rafnar-- O.K. Prosthetics
6. Stan Patterson-- Orthotics and Prosthetics Associates
7. Jeff Gambel, MD--- Walter Reed
8. Hani Ssaai, MD-visiting eastern Syrian doctor

### Health Care Delivery

Location:

McGaw Pavilion 240 E. Huron

Room 322

Rapporteur:

Nigel Snoad, PhD - Microsoft Humanitarian Networks

Secretaries:

Simone Boyle & Cara Tighe

Participants:

1. Rabih T. Torbay—International Medical Corp
2. Charles Doarn-- University of Cincinnati's Center for Surgical Innovation
3. Arkan Alrashid, MD –Iraqi Medical Science Association
4. Haifa Azawi, MD – National Arab American Medical Association
5. Hassan Fehmi, MD – National Arab American Medical Association
6. Kay Ghachem-- Healing the Children
7. Labib Hashimi, MD –Iraqi Medical Science Association
8. Riad Almudallal, MD –Iraqi Medical Science Association
9. Imad Almanaseer, MD –Iraqi Medical Science Association
10. Max Stachura, MD -- Center for Telehealth Medical College of Georgia
11. Mark VanderWerf -- AMD Telemedicine
12. Victoria Jacobs, MD- National Iraqi Assistance Center

### Medical Education and Training

Location:

McGaw Pavilion 240 E. Huron

Room 401

Co-Rapporteurs:

Michael Brennan MD- Medical Alliance for Iraq

Gary Selnow PhD-World Internet Resources for Education and Development

Secretary:

Ha Luu

Participants:

1. Dale C. Alverson, MD --Center for Telehealth and Cybermedicine Research
2. Dr. Elmir Cickusic -- Univeristy Klinical Center (Bosnia)
3. Nabil Khoury MD -- National Arab American Medical Association
4. Dr. Nedret Mujkanovic -- Univeristy Klinical Center (Bosnia)
5. The Lord Roger Swinfen—The Swinfen Trust Foundation
6. David Balch-- Medical Missions for Children
7. Christopher Spirito-- International Operations at The MITRE Corporation
8. Hareth Raddawi --National Arab American Medical Association
9. Rifat Latifi, MD--- The University of Arizona
10. Saroja Bharati MD --Chicago Medical Society
11. Dr. Raouf Seifeldin , MD – National Arab American Medical Association

### Refugee Assistance

Location:

McGaw Pavilion 240 E. Huron

Room 401

Rapporteur:

Emmanuel d'Harcourt, MD- International Rescue Committee

Secretary:

Ian Costello

Participants:

1. Taryn Gillison—Drexel University
2. Maryz Habib Meawad-- State Department
3. Donald Pat Patierno-- U.S. Advocate for the Slovenian-based International Trust Fund
4. Dr. Emir Halibegovic – Univeristy Klinical Center (Bosnia)
5. A Hadi Al Khalili, MD—Iraqi Embassy Cultural Attache
6. Mouhanad Hammami, MD – National Arab American Medical Association
7. Sayre Nyce- Department of Economic and Social Affairs (DESA)  
United Nations
8. Monte Achenbach- American Refugee Committee
9. Susan Fink- American Refugee Committee

## Appendix I



Col. Ron Poropatich, MD presenting Store and Forward Tele-Consultation, A Practical Approach to Telemedicine: The U.S. Army Experience



William Kennedy Smith, MD presenting iCons in Medicine- A Volunteer-Driven, Next Generation



Dan Sudnick presenting Iraq's Current Telecommunications Infrastructure



Naeema Al Gasseer, MD speaking about the more recent success of the Iraqi Ministry of Health



Riad Almodallal, MD presenting the potential for success for establishing a telemedicine link with the Iraqi health care system



Iraqi Minister of Health Salih Al Hasnawi, MD addressed the plenary by speaking about the current health care situation in Iraq and stressed the increased burden on resources as impeding access to health care.



## Appendix J



**Above: Health Care Delivery Workshop- Rapporteur Rabih Torbay**



**Above: Medical Education and Training workshop—Rapporteur Mike Brennan, MD**



Above: Refugee workshop—  
Rapporteur Emmanuel D'hartcourt

Above: War Wounded workshop—  
Rapporteur Tammy Duckworth

## Appendix K



**Conrad Clyburn addressing the closing plenary**



**International Trust Fund presentation— Donald Pat Patierno**



**Public health closing plenary presentation—  
Rapporteur Eric Rasmussen, MD**



**Refugee closing plenary presentation— Rapporteur Emmanuel D'hartcourt**



**War Wounded closing plenary presentation— Rapporteur- Tammy Duckworth**



**Medical Education and Training closing plenary presentation-Rapporteur Mike Brennan, MD**



**Health Care Delivery closing plenary presentation- Rapporteur Rabih Torbay**



## Iraq's Prescription for Violent Barriers to Health Care: Cell Phones and E-mail

Rebecca Voelker

CHICAGO—Two small tools taken for granted in much of the industrialized world—e-mail and the ubiquitous cell phone—could play major roles in helping Iraqi physicians fly over the radar of wartime violence to treat patients more effectively and help restore the country's once-robust health care system.

Since the 2003 US invasion, Iraqi medical professionals have been stretched to their limits. They are called on to treat casualties from explosions and car bombings so massive that patients in some cases outnumber hospital beds by 2 to 1. Physicians in Iraq also have become targets themselves, killed by death squads or kidnapped and held for ransom. Basic security needs compete daily with Iraqis' medical and public health needs.

These threatening conditions make it difficult or impossible for physicians in other parts of the world to volunteer in Iraq, and the country's damaged infrastructure may not support sophisticated electronic communications technologies. So a diverse group of experts has joined forces to explore just how much support may be available to Iraqi health professionals through relatively simple electronic communications technologies and a global aid network.

During a daylong conference here last May, these experts met in brainstorming sessions to develop new options for Iraq's Ministry of Health to use to strengthen the country's health system now and in the coming years.

"We are here to establish bridges between the Iraq Ministry of Health and

our colleagues in the United States," said Iraqi Health Minister Salih Al Hasnawi, MD. "We are working for the future, to see our country again positioned . . . as it was before . . . one of the most important countries in the Middle East."

### INTERNET CONSULTS

The conference also served as a forum for the rollout of a new Internet-based program that allows volunteer physicians to act as consultants to Iraqi physicians without setting foot in the country or taking substantial time away from their own practices.

The program, called International Consultants in Medicine (iCons in Medicine), is a joint effort of 4 groups: the Chicago-based Center for International Rehabilitation (CIR), the Chicago Medical Society, the National Arab American Medical Association (NAAMA), and the US-based Iraqi Medical Sciences Association.

Medical consults with iCons volunteer physicians are available to health professionals in remote areas through-

out the world. The program's immediate focus, however, is to make consultations available to physicians in Iraq and other countries in the Middle East.

"The goal is to deliver medical knowledge whenever it's needed, wherever medicine is practiced," said William Kennedy Smith, MD, president of CIR. Smith said the system is easy to use. "We have a desktop application which the remote physician uses; it's very much like an e-mail application," he explained.

Remote physicians need a computer and Internet access to download and install desktop software that allows them to upload case histories, which can be sent with digital image attachments. Through the iCons Web site, nonemergency cases are distributed to volunteers in the appropriate specialty, who receive an e-mail with a link to the case. Information is encrypted for secure transmission. When a volunteer accepts a case, he or she communicates directly with the remote physician through the Web site.



Although Iraqi physicians often work in a setting of violence and security threats, a new Internet-based program will allow volunteer physicians from other parts of the world to offer assistance on nonemergency cases via the Internet and cell phones.

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(Reprinted) JAMA, August 13, 2008—Vol 300, No. 6 637





## MEDICAL NEWS &amp; PERSPECTIVES

Requests for consults remain open for 48 hours. Consults that are not accepted by volunteers are sent to an iCons medical director. Remote physicians who request consults have to accept a disclaimer that affirms they are locally licensed health care practitioners and will not hold volunteers professionally liable for outcomes that result from the consultation.

Volunteers must be licensed physicians who agree not to have direct contact with patients whose cases are the subjects of consultations. Physicians who are willing to provide at least 3 consultations a year volunteer through organized chapters, which currently include the NAAMA (the first chapter) and the Chicago Medical Society. As few as 3 physicians can get together and apply to form a chapter. (More information is available at <http://www.iconsinmed.org>.)

Smith said iCons in Medicine hopes to attract 300 volunteers who will deliver 1000 consultations the first year. "The Internet . . . does allow people to connect around similar issues of interest regardless of whether they are separated by geography or culture," he noted. "It has a great way of finding people. Look at the way Facebook or eBay are connecting people around a particular interest. We want to apply that power to medicine."

**ASSESSING PUBLIC HEALTH**

NAAMA officials who just before the conference had returned from an outreach trip to Aleppo, Syria, said Internet-based medical consultations also can help Middle Eastern health officials get a better grasp on health statistics in the region.

"Public health statistics in the Middle East are incredibly inadequate," said Nabil Khoury, MD, president of NAAMA. Apart from gross death rates and birth rates, little information has been compiled, he said, noting that most health statistics in the Middle East are provided to health ministries in individual countries from the World Health Organization (WHO). Even though the WHO tracks cancer mor-

tality, Khoury said more detailed statistics are unavailable.

"When you ask, what is the death rate from prostate cancer, nobody knows. Breast cancer? No one knows. How can any health minister or university or major health center actually deliver this care without this basic information?"

Some efforts toward compiling more complete health statistics have begun. In collaboration with the WHO, the health ministries of Iraq and Kurdistan in 2006-2007 conducted the Iraq Family Health Survey. It is only the second family health survey conducted in Iraq, and the first from which results have been published. (The report can be downloaded at [http://www.emro.who.int/iraq/pdf/ifhs\\_report\\_en.pdf](http://www.emro.who.int/iraq/pdf/ifhs_report_en.pdf).) Field workers surveyed 9345 households countrywide, and 14 675 women of reproductive age (15-49 years). Among the findings: hypertension is the most common chronic health condition, with an incidence of 41.5 per 1000 population. Next were diabetes (21.8 per 1000), arthritis (18.6 per 1000), and heart disease (12.0 per 1000).

Mouhanad Hammami, MD, executive director of NAAMA, also noted that Internet consultations could reveal patterns of recurring health problems in specific areas. "That can lead to a platform of research or intervention or public health education," he said.

**PUT TECHNOLOGY TO WORK**

Experts at the conference who met in workshops to suggest ways in which the Iraqi health sector could use communications technologies to strengthen its services echoed some of Hammami's comments. Eric Rasmussen, MD, president and chief executive of the nonprofit organization Innovative Support to Emergencies, Diseases and Disasters, in Palo Alto, Calif, said cell phones and e-mail are important tools to carry out field work in disease surveillance in Iraq.

Emmanuel d'Harcourt, MD, MPH, acting director of the International Rescue Committee, suggested the creation of cell phone networks that can help inform refugees, internally dis-

placed persons, and local communities about vaccination programs or other forms of assistance.

Iraq war veteran Tammy Duckworth, a double amputee from war injuries who now is director of Veterans Affairs for Illinois, said it is common for those wounded in war to experience polytrauma. But health officials have little idea as to the extent of multiple war wounds in local communities. Increased use of cell phone networks could help Iraqi health officials to better estimate the extent of civilian war wounds, she said.

Noting that becoming an amputee is "a change-of-life condition," Duckworth also recommended more training for and eventually certification of prosthetists who can work to acclimate those who have lost limbs to using prosthetic devices as quickly as possible after their injuries. Vocation rehabilitation, Duckworth added, is a prime area for distance-learning methods.

"Identify those individuals who are sufficiently recovered and train them for an occupation they can do, train them for specific jobs in the community," she said.

Other recommendations included making digital capabilities available at public libraries, equipping physicians with hand-held computers, and using social networking sites like Facebook so that Iraqi physicians who have fled Iraq can share medical information with those still in the country. The need for online access to up-to-date medical journals also is great, experts said.

Iraqi Health Minister Al Hasnawi said that with technical assistance from US health officials, the WHO, humanitarian groups, and an emerging global system of Internet-based medical consultations, a long-term strategy to resurrect the country's health care system can be developed.

"My belief is that many people will help," he said.

In the long run, cell phones and e-mail can never fully replace hands-on medical care. But in war-torn Iraq, these tools could offer help toward rebuilding what once was known as the jewel of Middle Eastern health care. □



# Chicago Tribune

## Doctors to provide online consultations in war areas

### Chicago group aims to get 300 volunteer physicians

BY BRUCE JAPSEN INSIDE HEALTH CARE

May 22, 2008

A volunteer effort to link health professionals in war-torn areas of the world with specialized physicians who can provide consultations via the Internet will be unveiled Friday at a Chicago conference.

The alliance, led by the Chicago-based *Center for International Rehabilitation*, hopes to sign up 300 volunteer doctors who will do 1,000 consultations in the first year.

The alliance will be called "iCons in Medicine" and will include volunteers from the *Chicago Medical Society* and the *National Arab American Medical Association*.

"Our goal is to get medical knowledge where medicine is practiced," said *Dr. William Kennedy Smith*, who specializes in rehabilitation medicine and is president of the Center for International Rehabilitation. "The Internet has just exploded in its penetration, and we are really taking advantage of that."

Consultations via the Internet is one aspect of so-called telemedicine, which can be as simple as a secure conversation between health professionals or as complex as the ability for one doctor to read an X-ray remotely to assist with a diagnosis for a medical care provider in another area of the world.

The group initially plans to target areas beset by violence and suffering from poverty in Middle Eastern countries such as Iraq.

"We also hope to learn directly from the Iraqis ... [to] help improve the quality and availability of health care in the region," said Smith.

"Icons" will be officially launched at "Telemedicine Support for the Iraqi Health Sector: Building Bridges Through Humanitarian Relief," which will be attended by *Iraq Minister of Health Dr. Salih Al Hasnawi*.

"We are looking forward to unveiling what we believe is a highly innovative approach to humanitarian relief that brings the best of care together with the latest technology," said Smith, an adjunct instructor at *Northwestern University Medical School* and founder of *Physicians Against Land Mines*.

He is also the son of former ambassador to Ireland *Jean Kennedy Smith* and the nephew of *U.S. Sen. Edward Kennedy (D-Mass)*.

## Appendix M

### Training Learning Goals

The table below illustrates the learning goals of the training, as well as the corresponding delivery and assessment techniques.

Learning Goal	Delivery Strategy	Assessment Strategy
Spinal Rehabilitation	Lecture Series: <ul style="list-style-type: none"> <li>• Management of Acute SCI</li> <li>• Complications Management (early and late)</li> <li>• Functional Enhancement Intervention</li> </ul> Practical training under a mentor's supervision	Group discussions, practical training, quizzes, and a final exam
Stroke and TBI Rehabilitation	<ul style="list-style-type: none"> <li>• Medical Intervention</li> <li>• Management of Unconscious Patients</li> <li>• Stroke Rehabilitation Technique</li> <li>• Psychosocial Care</li> </ul> Practical training under a mentor's supervision	Group discussions, practical training, quizzes, and a final exam
Limb Fitting and Amputee Rehabilitation	<ul style="list-style-type: none"> <li>• Pre-prosthetic Management</li> <li>• Prosthetic Fitting and Fabrication</li> <li>• Prosthetic Evaluation and Follow-up</li> <li>• Gait Analysis and Training</li> <li>• Practical training under a mentor's supervision</li> </ul>	Group discussions, practical training, quizzes, and a final exam
General Rehabilitation	<ul style="list-style-type: none"> <li>• Musculoskeletal Rehabilitation</li> <li>• Pediatric Rehabilitation</li> <li>• Geriatric Rehabilitation</li> </ul> Practical training under a mentor's supervision	Group discussions, practical training, quizzes, and a final exam

## Appendix N

WEEK 1				
Date	TIME	LECTURER - INSTRUCTOR	SUBJECTS	LOCATION
3	8:00 - 8:45 Pre-evaluation 8:45 - 9:00 Break 9:00 - 11:00 Presentation 11:00 - 13:00 Practical 13:00 - 14:00 Lunch 14:00 - 16:00 Practical	Lecturer: Dr. Suada Kapidzic Durakovic, Dr.Osman Sinanovic, Dr. Mirsada Praso  Instructors: Dr.Asija Hotic, Dr.Azra Tunjic, Dr.Amela Ciskusic,	<b>Stroke and TBI rehabilitations</b> <u>Medical intervention</u>  Lecture 1: Neurological treatment of patients after stroke and head injuries	University Clinical Center of Tuzla  Education Center of the UKC  Clinic for Physical Medicine Clinic for Physical Rehabilitation, Neurology
Tue	8:00 - 8:45 Pre-evaluation 8:45 - 9:00 Break 9:00 - 11:00 Presentation 11:00 - 13:00 Practical 13:00 - 14:00 Lunch 14:00 - 16:00 Practical	Lecturer: Dr. Suada Kapidzic Durakovic, Dr.Osman Sinanovic, Dr.Mirsada Praso  Instructors: Dr.Asija Hotic, Dr.Azra Tunjic, Dr.Amela Ciskusic,	Lecture 2: Early rehabilitation of patients after stroke Lecture 3: Early rehabilitation of patients after head injuries	University Clinical Center of Tuzla  Education Center of the UKC  Clinic for Physical Medicine Clinic for Physical Rehabilitation, Neurology
Wed	8:00 - 8:45 Pre-evaluation 8:45 - 9:00 Break 9:00 - 11:00 Presentation 11:00 - 13:00 Practical 13:00 - 14:00 Lunch 14:00 - 16:00 Practical	Lecturer: Dr. Suada Kapidzic Durakovic, Dr.Osman Sinanovic, Dr.Mirsada Praso  Instructors: Dr.Asija Hotic, Dr.Azra Tunjic, Dr.Amela Ciskusic,	<u>Management of unconscious patient</u> Lecture 1: Treatment of unconscious patients Lecture 2: Care of unconscious patients Lecture 3: Nutrition of unconscious patients	University Clinical Center of Tuzla  Education Center of the UKC  Clinic for Physical Medicine Clinic for Physical Rehabilitation, Neurology
Thu	8:00 - 8:45 Pre-evaluation 8:45 - 9:00 Break 9:00 - 11:00 Presentation 11:00 - 13:00 Practical 13:00 - 14:00 Lunch 14:00 - 16:00 Practical	Lecturer: Dr. Suada Kapidzic Durakovic, Dr.Osman Sinanovic, Dr.Mirsada Praso  Instructors: Dr.Asija Hotic, Dr.Azra Tunjic, Dr.Amela Ciskusic,	Lecture 4: Hygienic training of unconscious patients Lecture 5: Rehabilitation of unconscious patients	University Clinical Center of Tuzla  Education Center of the UKC  Clinic for Physical Medicine Clinic for Physical Rehabilitation, Neurology
Fri	8:00 - 8:45 Pre-evaluation 8:45 - 9:00 Break 9:00 - 11:00 Presentation 11:00 - 13:00 Practical 13:00 - 14:00 Lunch 14:00 - 16:00 Practical	Lecturer: Dr. Suada Kapidzic Durakovic, Dr.Osman Sinanovic, Dr.Mirsada Praso  Instructors: Dr.Asija Hotic, Dr.Azra Tunjic, Dr.Amela Ciskusic,	<u>Stroke rehabilitation technique</u> Lecture 1: Functional measurements after stroke Lecture 2: Bobath exercises, PNF exercises,	University Clinical Center of Tuzla  Education Center of the UKC  Clinic for Physical Medicine Clinic for Physical Rehabilitation, Neurology

## Appendix N continued

WEEK 2				
Date	TIME	LECTURER - IN-STRUCTOR	SUBJECTS	LOCATION
Mon	8:00 - 8:45 Pre-evaluation 8:45 - 9:00 Break 9:00 - 11:00 Presentation 11:00 - 13:00 Practical 13:00 - 14:00 Lunch 14:00 - 16:00 Practical	Lecturer: Dr. Suada Kapidzic Durakovic, Dr.Osman Sinanovic, Dr.Mirsada Praso Instructors: Dr.Asija Hotic, Dr.Azra Tunjic, Dr.Amela Ciskusic,	Lecture 3: Speech exercises, Soma-totherapy	Education Center of the UKC  Clinic for Physical Rehabilitation, Neurology  Clinic within Department for Early Rehabilitation
Tue	8:00 - 8:45 Pre-evaluation 8:45 - 9:00 Break 9:00 - 11:00 Presentation 11:00 - 13:00 Practical 13:00 - 14:00 Lunch 14:00 - 16:00 Practical	Lecturer: Dr. Suada Kapidzic Durakovic, Dr.Osman Sinanovic, Dr.Mirsada Praso Instructors: Dr.Asija Hotic, Dr.Azra Tunjic, Dr.Amela Ciskusic,	<u>Psychosocial care</u> Lecture 1: Mini mental status	Education Center of the UKC  Clinic for Physical Rehabilitation, Neurology  Clinic within Department for Early Rehabilitation
Wed	8:00 - 8:45 Pre-evaluation 8:45 - 9:00 Break 9:00 - 11:00 Presentation 11:00 - 13:00 Practical 13:00 - 14:00 Lunch 14:00 - 16:00 Practical	Lecturer: Dr. Suada Kapidzic Durakovic, Dr.Osman Sinanovic, Dr.Mirsada Praso Instructors: Dr.Asija Hotic, Dr.Azra Tunjic, Dr.Amela Ciskusic,	Lecture 2: Zung's questionnaire for depression and anxiety Lecture 3: Work with the patient's family	Education Center of the UKC  Clinic for Physical Rehabilitation, Neurology  Clinic within Department for Early Rehabilitation
Thu	8:00 - 8:45 Pre-evaluation 8:45 - 9:00 Break 9:00 - 11:00 Presentation 11:00 - 13:00 Practical 13:00 - 14:00 Lunch 14:00 - 16:00 Practical	Lecturer: Dr. Suada Kapidzic Durakovic, Dr.Osman Sinanovic, Dr.Mirsada Praso Instructors: Dr.Asija Hotic, Dr.Azra Tunjic, Dr.Amela Ciskusic,,	Lecture 4: Team work with psychiatrist and social worker	Education Center of the UKC  Clinic for Physical Rehabilitation, Neurology  Clinic within Department for Early Rehabilitation
Fri	9:00 - 13:00 Final Practical evaluation 13:00 - 14:00 Lunch 14:00 - 16:00 Final Theoretical Evaluation	Lecturer: Dr. Suada Kapidzic Durakovic, Dr.Osman Sinanovic, Dr.Mirsada Praso Instructors: Dr.Asija Hotic, Dr.Azra Tunjic, Dr.Amela Ciskusic,		Education Center of the UKC  Clinic for Physical Rehabilitation, Neurology  Clinic within Department for Early Rehabilitation

## Appendix O

### Personnel and Financial Reports Project Staff, Role and Percent Effort on Project

Personnel	Role on Project	Effort on Project
Smith, William MD	Principal Investigator	28%
Casanova, Hector R.	Vice President of Operations	4%
Prvulov, Nikola	Field Operations Manager	43%
Leon-Guerrero, John T.	Technical Support Specialist	35%
Frankel, Laura	Research Manager	100%
Przygocka, Justyna F	Office Manager	3%
Ervin, Deborah Lynn	Dir. Of Marketing & Communication	92%
Miller, Julie C	Communications Officer	69%
Aguda, Bonnie	Vice President of Operations	26%
White, David	Lead Programmer	100%
Jackson, Kathryn	Intern	7%
Costello, Ian	Communications Officer	99%
Dave, Krishna	Office Manager	100%
Amalorpavam, Alexander	Lead Programmer	100%

Cost Elements	Current Period	Year-To-Date
PERSONNEL	\$ 320,628.72	\$1,288,857.77
FRINGE BENEFITS	\$68,876.51	\$295,838.50
CONSULTANT COSTS [CONTENT EXPERTS, SOFTWARE & WEB DEVELOPMENT]	\$123,556.77	\$361,665.88
MAJOR EQUIPMENT	\$0.00	\$0.00
MATERIALS, SUPPLIES, & CONSUMABLES	\$24,593.71	\$96,588.86
TRAVEL COSTS	\$32,912.47	\$92,975.11
RESEARCH-RELATED PATIENT COSTS	\$0.00	\$ 0.00
OTHER EXPENSES	\$47,585.66	\$167,535.79
<b>SUBTOTAL DIRECT EXPENDITURES</b>	<b>\$618,153.84</b>	<b>\$2,303,461.91</b>
TOTAL INDIRECT COSTS FOR THIS BUDGET PERIOD	\$189,837.75	\$738,002.83
<b>TOTAL EXPENDITURES FOR THIS BUDGET</b>	<b>\$807,991.60</b>	<b>\$3,041,464.75</b>